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TABLE OF CONTENTS

The Ancestor of All Flowers	Grace T. Dowling	97
Those Perplexing Photinias	Pat Ballard	99
Winter Color	Mary Elmore	101
Western Larch	C. Frank Brockman	103
Arboretum Spotlight		104

A MAPLE SYMPOSIUM

Maples of Japan	Yoshiharu Matsumura	105
An Upright Oregon Maple	B. O. Mulligan	112
Maples for Park and Garden Use As They Grow in the Arnold Arboretum	Donald Wyman	113
Many Little-Known Maples Ready for Extensive Use	Edward H. Scanlon	116
Notes on Species of Maples to Be Found in Seattle's Parks and Streets	Roland Koepf	119
Germination of Maple Seeds	L. J. Michaud—B. O. Mulligan—J. A. Witt	121
Maples Cultivated in the Arboretum		124
<hr/>		
Notes and Comment		122
The McMahon Rhododendron Gift		123
Richard Emil Layritz		125
Arboretum Notebook		126
Book Reviews		129
Index to Volume XVII		134

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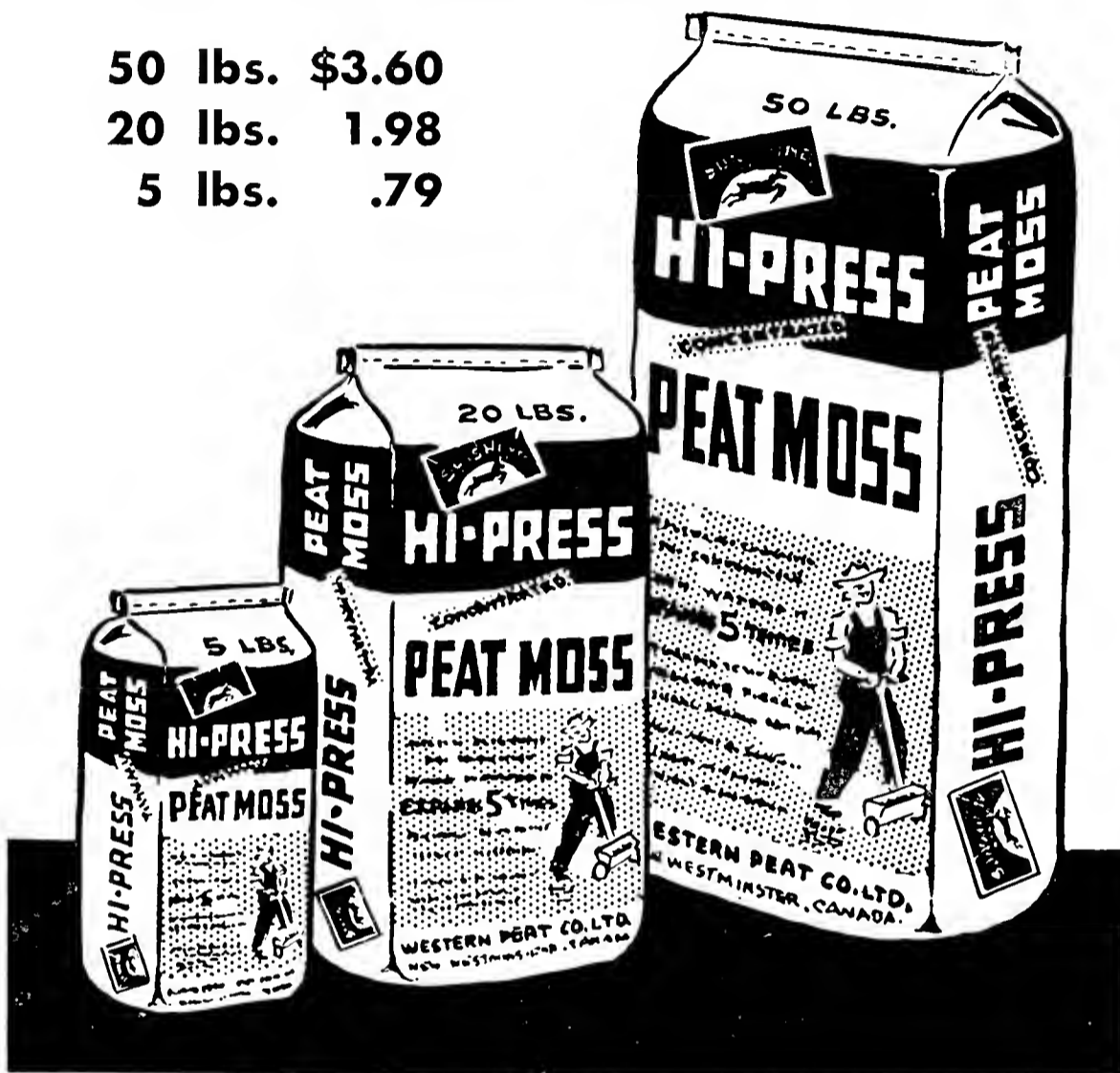
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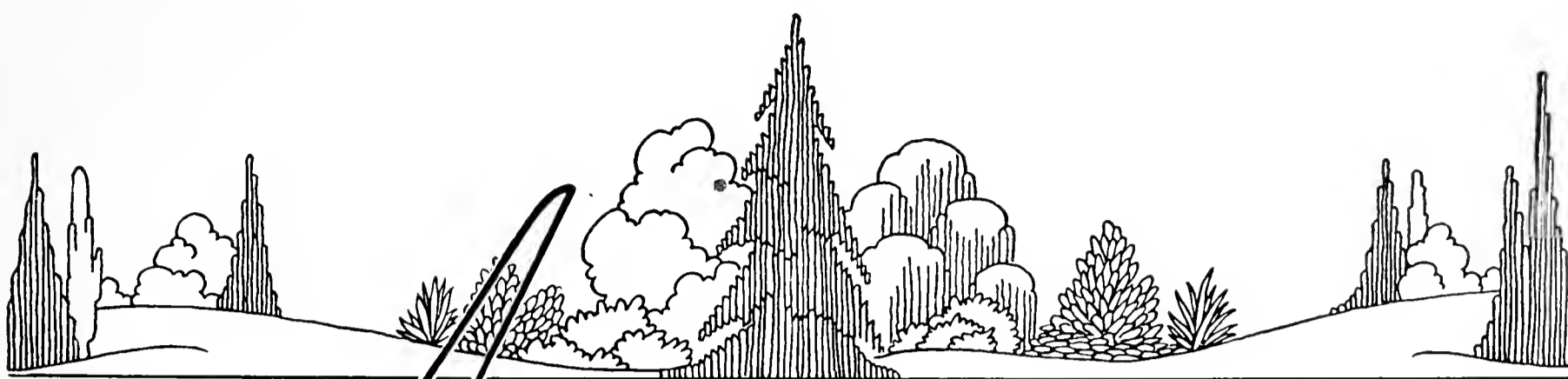
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The Arboretum Bulletin

VOLUME XVII

WINTER, 1954

NUMBER 4

The Ancestor of All Flowers

GRACE T. DOWLING *

DURING the Tertiary age of this planet, some sixty million years ago, a little yellow flower, the first of all flowers, flourished. In comparatively recent years, it has been named Buttercup and assigned to the *Ranunculaceae* family.

After a million years or so, this ingenious blossom discovered that seeds, developed from the union of its own pollen with its own pistil, were not always sufficiently productive. Greater ability to produce more vigorous growth was shown when pollen was brought by insects from other buttercups on different plants and was deposited on the pistil. Something had to be done to persuade the insects to carry pollen to and from neighboring flowers. Subsequently, several changes developed to improve the efficiency and fertility of seed production. By slow degrees, the petals became shiny, which attracted more insects. The stamens were altered to curve away from the pistil in an effort to keep its own pollen from its own reproductive organs. Then the buttercup modified each wedge-shaped petal by folding back the point nearest the stamens in order to make a miniature receptacle holding a bit of honey or nectar, for insects love sweets. Honey-making insects responded im-

mediately. They found compensation as well as enticement. With various modifications and improvements, this epoch-making device has been used by innumerable flowers which developed during the following ages. When the ovules in the ovary of the buttercup are cross-pollinated the petals fall, as they are no longer necessary. Seeds are formed after the sepals wrap themselves about the seed-making organs to protect them from rain, wind or marauding insects.

Most flowers that stand erect and open to the sky, like buttercups and wild roses, are visited by flying insects, both long- and short-beaked. The crawling insects are objectionable for they crawl from one flower to another, they waste the pollen and are not so selective as flying insects who visit one species of a flower at a time. Ants are especially obnoxious. To discourage them, the buttercups have grown stiff hairs on the lower parts of the flower stems through which it is difficult for ants to climb. As an additional protection, the sepals of the calyx are turned back on the stem and are covered with tiny hairs, making a trap for the unwary.

Even with the first plants, it was common knowledge that seeds must travel away from the parent plant to find locations where the soil had not been devastated by former growths. The buttercup did not develop any

*Mrs. J. Thomas Dowling is editor of the Arboretum Notebook and a member of the Editorial Board.

intricate contrivance to scatter seeds as many of its descendants had evolved, but because it began its life in the water it surrounded the heart of each seed with a tiny sac of oil which enabled the seed to float. By this means, seeds could travel distances away from their relations in search of new soil and a desirable place in the sun. Even in this extremely primitive age, the fact that oil and water do not mix must have been known.

Some varieties of *Ranunculus* have developed clever customs of spreading by means of their roots. One species has produced a little corm, which is similar to the gladiolus corm, so that it may expand its growth. *R. repens* has formed shoots that bend down and make roots from which new plants grow. This method of increase is so successful that today entire lawns may be appropriated by these indomitable creeping plants and it is almost impossible to eradicate them. This intelligent little herb has a happy faculty of tucking its roots under the protective cover of other growths such as grass, moss or under the leaves of plants in hedgerows where the soil is cool; consequently deep roots are not necessary to reach the subsoil for moisture.

"In the beginning" all plants were completely submerged in water. Sunshine is necessary to make chlorophyll . . . the green in the leaves . . . so here, where the sunlight could barely penetrate, the leaf pattern was more or less that of a skeleton. When the water over the earth receded, the buttercup emerged from this partial obscurity and the leaf shape gradually began to change. Today the leaves of the buttercup vary in shape and in texture dependent upon their environment. All are equally interesting and distinctive. For self-preservation, when grazing animals began to inhabit the earth, the buttercup developed an acrid-tasting fluid in the plant leaves which was disagreeable to feeding animals and allowed the plants to grow to maturity.

In crowded localities, such as hedgerows and partly shaded places, the vigorous stem is able to elongate itself and reach up among

its neighbors to get its own share of the sun. In meadows or lawns the buttercup crouches close to the soil where it can feel the cool of the earth and can avoid the blades of the lawnmowers.

Most primitive flowers were yellow. The majority of buttercups have yellow flowers as there is much yellow pigment in all leaves and the development of yellow flowers offered little difficulty, but now white and red forms are found. The buttercup is both annual and perennial.

Each species can boast of an interesting history. The earliest record of a buttercup found on our American continent was made by David Wilson, a botanist with Captain Cook on his famous third voyage in the ship *Resolution*. David Wilson found a *Ranunculus* growing on an Aleutian Island in the Bering Sea in 1778. It was named *Ranunculus Wilsoni* and the little flower still carries his name.

The genus has very little economic value. In emergencies, the early Indians used the seeds to grind into flour.

Ranunculaceae, the Latin family name . . . meaning a little frog . . . was given to this large group of plants, as originally many of them lived in marshy places. It is popularly called the Crow-Foot Family because of the fancied resemblance of some species' leaves to a crow's foot. There are approximately 275 species growing all over the world which vary their manner of growth with their particular environment. The buttercup has many aristocratic relatives. Columbine, delphinium, meadowrue, clematis and anemone are among those that belong to the *Ranunculaceae* family. The buttercup group has been given the genus name *Ranunculus*.

This outstanding plant personality developed a discriminating precedent for a long line of plants that followed it down through the ages. It has met its perplexing problems by trial and error with intuition and imagination. Now we have it pushing itself into every cool, damp corner and cleft throughout the world.

Those Perplexing Photinias

PAT BALLARD *

PART I

THE MAN with the hoe is sometimes short of patience with the man of science, and questions what he considers to be flagrant inconsistencies. The truth of the situation is that nature refuses to conform; that the taxonomic botanist has no control over the elements with which he is working; and that the gardener is subject to the same pitfalls.

Take photinias. I always thought I could take them or leave them to their way of life while I proceeded along mine. And then I found what, at first glance, appeared to be another arbutus not far from some strawberry trees (*Arbutus Unedo*) and manzanitas (*Arctostaphylos*) in an Arboretum planting. The stumbling block in my path to identification was the flower form. It looked more like a hawthorn blossom than anything else. The label, in clear, uncompromising type, said "*Photinia arbutifolia*," and I was off on another tangent.

What is *Photinia*? After a brief period as an inquiring reporter I learned that the answers can be as diverse as the blind men's descriptions of an elephant. One gardener may say that, to him, the word "photinia" means an evergreen tree with coppery spring foliage and a potential height of about forty feet. Another will praise the graceful habit of a twelve- to sixteen-foot deciduous tree that brightens his garden with autumn color. A California collector of native plants might extoll the arbutus-like leaves and the crimson fruit of the shrub he calls "Christmas Berry," or "Toyon." Others tell of an accommodating evergreen shrub seldom more than six to eight feet tall and which, by judicious pinching and pruning, gives them color throughout the spring and summer.

All of these are photinias and to the gardener they may seem quite dissimilar. It

takes the man of science to ferret out their similarities and to put them into their proper niches in the Plant Kingdom—and even the botanists cannot always agree into just which compartment each shall be placed. Photinias have been thrust into genus after genus during the last one hundred and seventy years. The genera *Crataegus*, *Stranvaesia*, *Sorbus*, *Mespilus* and *Eriobotrya* have all been hosts to various species of *Photinia*.

Webster's oft-consulted reference says *Photinia*† is a member of the *Malaceae* (Apple Family); there are those who call it *Pomaceae*; the Royal Horticultural Society's *Dictionary of Gardening* places it in the *Rosaceae* (Rose Family). Most of those who retain the traditional boundaries of this large family concede that it should be divided into sub-families or tribes. These show their family resemblance in their floral parts, but are distinguished from each other chiefly by the characters of their fruits. Rehder's *Manual* shows four sub-families; Lawrence's *Taxonomy*, six; Bailey's *Cyclopedia* makes it easier for us (or more difficult if we are apt to be confused by numbers) by dividing the Rose Family into thirteen "tribes." The sub-family in which we are interested is the *Pomoideae* with its inferior, compound ovary and its fleshy, pome-like fruit. Here we find *Malus* (apple), *Pyrus* (pear), *Cydonia* (quince), *Chaenomeles* (flowering quince), *Cotoneaster*, *Pyracantha*, *Crataegus* (hawthorn), *Stranvaesia*, *Mespilus*, *Eriobotrya* (loquat), *Raphiolepis* and *Photinia*. This alliance is really not difficult to understand when we examine the similar flowers and the apple-like fruits common to these economically and ornamentally important shrubs.

The differences between these genera are sometimes very slight and the resulting confusion has set up an interesting synonymy.

*Mrs. Page Ballard never spares herself in behalf of the Arboretum—truly a staunch supporter as well as an invaluable aid on our Editorial staff.

†Name derived from the Greek word *photeinos*—shining—alluding to the leaves.

Photinia serrulata of Lindley (1821), perhaps the most familiar to us, was identified as *Crataegus glabra* by Loddiges (1818), *Mespilus glabra* by Colla (1824), *Crataegus serratifolia* by Desfontaines (1829), and *Stranvaesia Argyi* by Leveille (1916). A comparison of the foliar, floral and fruiting parts gives us a glimpse of the reasons for this confusion.

To make the path of the tyro a bit less difficult, the genus *Photinia* has been subdivided into two sections by some authorities, and three by others. These sections are easily defined for the amateur since all deciduous species go into the section *Pourthiaca*, and those with evergreen leaves into *Euphotinia*. The third section either stands alone or is included in *Euphotinia*. When completely separated it is known as *Heteromeles*, and it is in this section that *P. arbutifolia* and its allies are placed.

The earliest botanical reference to a member of this genus seems to be in Thunberg's *Flora Japonica* (1784) in which he describes *Crataegus villosa* (*P. villosa*).

It was in 1796 that the first photinia was introduced into the British Isles, collected in California by Archibald Menzies when he served as botanist under Captain Vancouver. Eight years passed before a Captain Kirkpatrick of the East India Company brought the first of the Oriental species to his countrymen. Both of these were called *Crataegus* in early nineteenth century publications; the Californian was named *C. arbutifolia* by Aiton in an 1811 edition of *Hortus Kewensis*, and the Chinese species was known as *C. glabra*.

Most authorities credit the first valid description of the genus to John Lindley, in the Linnaean Society's Transactions of 1821, and cite *P. serrulata* as the type species of the genus ("the species which the original author had in mind when establishing the genus"—G. H. M. Lawrence). It is interesting to note that Mr. Lindley had described *P. arbutifolia*, as such, in Volume VI (1820) of the *Botanical Register*, where we find it is accompanied by a fine, colored engraving (plate 491). In 1947 M. Roemer separated this latter species from its brethren and created the genus which he

called *Heteromeles* (hetero—different, meles—apples). His reason being that it alone has 10 stamens and the other members of the genus are alike in possessing about 20 stamens. Abrams, Bean, and the *Dictionary of Gardening* all accept this generic rating, and in these publications it is called *Heteromeles arbutifolia*.

As garden material the photinias have much to recommend them. They are striking in foliage whether they be evergreen or deciduous, their flowers are very similar to the hawthorns, and their clusters of bright fruits give autumn interest to the garden. It is true that the evergreen species are of questionable hardiness in the Seattle area, but *P. serrulata* survived our notorious winter of 1949-50 in many gardens. A gardener in the Magnolia district reports that it was not at all damaged there; another, in the vicinity of Lake Burien, says that neither *P. serrulata* nor *P. glabra* were harmed in her garden; several reports from north of the Canal tell of considerable burning of foliage; in extremely cold areas (where the temperature hovered between zero and 10 degrees below) it was frozen to the snow line, but renewed its growth from that point. It could certainly be grown against a sunny wall or with the protection of a larger tree. (One landscape designer in our midst says it is stunning in a border with an Austrian pine as the accent and with *P. glabra* as an underplanting). John Grant advises giving them as little summer watering as possible. J. C. Loudon, as long ago as 1844, thought that *P. arbutifolia* was as hardy or hardier than *P. serrulata*. In the Arboretum, though frozen to the ground, it made an excellent recovery and the handsome shrub by the Rhododendron Glen sign, on the Upper Road, is its own best testimonial. It flowered well this year but did not set much fruit.

There are several means of propagation. Wilfred Sheat suggests layering them in the autumn, pegging them down securely and placing sand around the base of each layer. He says to examine them the following year and if they are beginning to root they may be

(Continued on Page 133)

Winter Color

MARY ELMORE *

IF YOU are aware of a lack of interest in your garden during the winter, a very simple planting or rearrangement may solve your problem. The secret of a successful winter planting is concentration of color. The flowers of winter may be fewer but there are more than we are usually conscious of. Many of them are lost in the garden because they are thinly distributed among the trees and shrubs of other seasons. An inventory of your own resources may well surprise you. Maybe you already have enough material scattered about the garden to create a cheerful winter group. A single plant, not noticeable by itself, becomes important when associated with companion plants of the same or a harmonizing color. So, to achieve a memorable winter picture, assemble the plants with winter interest in one or two concentrated areas.

The proportion of winter flowering plants to those of other seasons need not be large, for each plant that flowers then has ten times the individual value than the same plant would have at other times of the year when competing with flamboyant masses of bloom from trees, shrubs, annuals and perennials. For example, one little winter pansy blooming in February can be as exciting as a bed of fifty Swiss Giants in June. All color is more precious to us in winter if only because it is seen in a muted world of low light intensity. Dark, mature, evergreen foliage and brown branches, pale gray skies and leaden clouds are unbelievably warmed by even the smallest flash of vibrant color. Summer's blue skies, clean white clouds, varied greens and clear light demand far more from flowers in volume and intensity of color.

A few hardy souls may make daily inspection tours of every part of their gardens throughout the winter, but the majority do not linger outdoors more than is necessary. The

pleasure they may derive from their gardens is confined for days on end to the parts that can be seen from windows, the terrace, along the front and back walks and by the garage. These, then, are the logical locations for your groups of winter flowers. For city dwellers one would add the street front so that passers-by might enjoy some color, too. The subtleties of winter's quieter blossoms can be more appreciated when planted close at hand. The scent and beauty of the pale yellow, brown-throated, intricate claw-shaped flowers of *Chimonanthus fragrans*, the winter sweet, is lost from fifteen feet away.

The basic ideas to keep in mind when selecting and arranging the plants to form your winter picture are these: Don't mix pink-rose tones with the yellows or greenish yellows. Winter pinks are inclined to have a purplish cast, clash with yellow, are not enhanced by white, and harmonize best with lavender blues and violet. A white arrangement can be enlivened by the introduction of clear blue or yellow. Bright berried holly, pyracantha, etc., and bronze leaves form an excellent background for yellow. Rosy-red berries and rosy-leaved shrubs such as *Euonymus radicans colorata* are fine with the pinks. So existing plants may help in choosing a color group. Try to maintain a nice balance between evergreen and deciduous material. Bare branches, unrelieved by evergreen companion plants, can be rather dreary when the shrubs aren't actually in bloom. With the arrangement placed near well-traveled ways, consider the year-around aspect. The following simple associations may be helpful in suggesting others:

Birch—Springwood white heather—*Galanthus*—*Leucojum*.

Pussy willow—*Sarcococca*—white pansies—yellow crocus—*Scilla sibirica*.

Symphoricarpos—*Pernettya*—both white or both pink.

Garrya elliptica—filbert—*Helleborus foetidus* or *H. corsicus*.

(Continued on Page 132)

*We are pleased to bring a "first" article by Miss Elmore, member of the Frances Macbride Arboretum Unit No. 41 and long a gardening enthusiast.



Western Larch

Larix occidentalis Nuttall

C. FRANK BROCKMAN*

THE WESTERN larch provides one of the most interesting arboreal accents to Northwestern forests. A deciduous tree, it reflects the moods of our seasonal changes more nearly than any of our native conifers. Stark, naked branches are characteristic of this species in winter; but in spring the larch becomes a tree of grace and beauty with soft, green foliage, delicate in color and effect. Later, when the first hint of winter chills the autumn air, the larch—as if to celebrate the passing of summer—enlivens somber, coniferous-clad hillsides with vivid splashes of gold. At that season the forests of the Inland Empire, its chosen habitat, are clothed in splendor by the golden-yellow foliage of the western larch.

Four species of larch are native to North America. *Larix occidentalis* (fig. 14) achieves much more massive stature and is of far greater importance than the others, for at maturity it reaches a height of from 150 to 200 feet—grows to a diameter of from four to seven feet and lives to be 500 to 600 years of age.

The flatly-triangular, deciduous foliage is borne upon short spur shoots in dense, brush-like clusters—except near the ends of the twigs where the needles are produced singly. Staminate and pistillate flowers are borne close together upon the same tree. The former are yellow-green and about the size of a pea; the latter being slightly larger and bright purplish-red in color. The cones are about one to one-and-a-half inches long, broadly egg-shaped and characterized by long, slender bracts extending beyond the ends of the scales. They mature in one season and during fall and winter liberate the small, chestnut-brown, winged seeds.

*Another interesting "Tree Series" article by Mr. Brockman of our editorial staff.



Western Larch (*Larix occidentalis*) by road to Mission Peak, Kittitas County, Washington. (Fig. 14)

—PHOTO BY B. O. MULLIGAN

Bark of the mature western larch is deeply furrowed and dark, purplish-brown in color, its surface composed of numerous overlapping plates. In these respects its bark character is somewhat similar to that of mature ponderosa pine, one of its most common associates. Bark on young western larch, however, as well as that on the upper trunk of mature trees, is relatively thin, scaly, and reddish-brown.

Although occasionally found in pure stands, the western larch generally grows with ponderosa pine, lodgepole pine, Douglas fir and lowland white fir. At higher levels it is often found with Engelmann spruce and even alpine fir (*Abies lasiocarpa*).

In spite of the fact that the wood of the western larch is the heaviest of all conifers it is being increasingly used for certain types of furniture and interior finish, in addition to boxes, railroad ties and general construction purposes.

Those of us who live in the Puget Sound area must visit the region east of the Cascade crest to observe this beautiful tree in its natural setting. It can be found readily in the vicinity of American River, east of Chinook Pass, as well as along the White Pass Highway en route east to Yakima. But, in the fall at least, it is perhaps most resplendent in the Okanogan highlands of Washington and southern British Columbia. It is also found through northern Idaho to the Rockies of western Montana, and south in the Wallowas and adjacent mountains of eastern Oregon.

"Tamarack," a name frequently used for the western larch, has been borrowed from *Larix laricina*—a common tree of the Lake States, New England and southern Canada. In the latter country it extends from the Atlantic in Newfoundland northwestward to the Yukon and, in addition, is also found in Alaska.

ARBORETUM SPOTLIGHT

Viburnum fragrans ... a winter promise

NO SHRUB for this season can be more happily "spotlighted" than *Viburnum fragrans* (fig. 15). Its listing under "winter-blooming shrubs" is so deserving—the procession of bloom is veritably winter into that spring which cannot be too far behind.

One needs only to thumb through back numbers of the Royal Society's *Journals* to find this attribute fully borne out by continuous mention of the honored spot in which it is planted, Wisley's "Award of Merit" Garden. September (says the author)—"*Viburnum fragrans* with a few early flowers among the warmly tinted leaves." October—"in full bloom this year by mid-October." November—"early flowers of perhaps the best of all winter-blooming shrubs." January—"displaying pale pink and sweetly scented white clusters at every mild break of the weather." February—"pale clusters of bloom."

Yet, Reginald Farrer, its discoverer, found it blooming in early April near a little village in North China. No one could describe it better than Mr. Farrer, for it is perhaps his finest memorial . . . "*Viburnum fragrans* for the first time appeared to us, amid a cloud of white . . . gracious arching branches, ten feet high and more across, whose naked boughs . . . before the foliage, become one blaze of soft pink lilac spikelets breathing an intense fragrance of heliotrope."

Viburnum fragrans in the Winter Garden at the Arboretum put forth its first fragrance in October this year, and from now on until March only the severest winter can keep it from its lovely appointed promise.

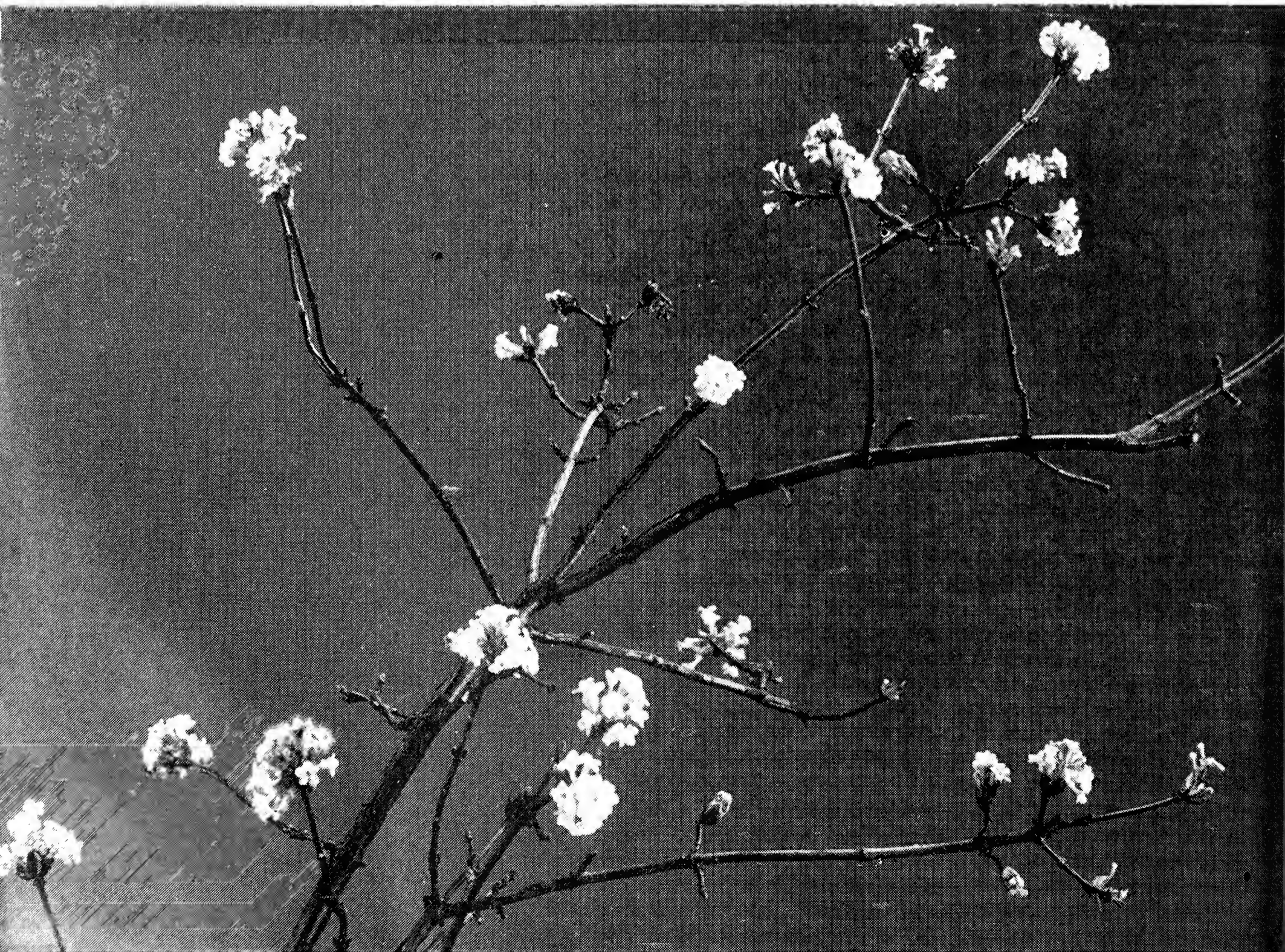
GENE WEBB

Below:

Viburnum fragrans . . . flowering branches
from the Winter Garden, 1954

(Fig. 15)

—PHOTO BY E. F. MARTEN



Maples of Japan

YOSHIHARU MATSUMURA*

AUTUMN COLORATION fills a great role in the physiognomy of Japan. No one hesitates to recommend a m \ddot{a} p \ddot{a} le as a star of autumn coloration. Above all, the best are *Acer japonicum* Thunb. and *A. nikoense* Maxim.

There are fundamentally 24 species, 4 varieties and tremendous numbers of so-called horticultural varieties or forms of maple described in Ohwi's *Flora of Japan* (1953). Some of them change their color to red and others to yellow.

Acer Sieboldianum Miquel, *A. japonicum* Thunb., *A. Shirasawanum* Koidz., *A. palmatum* Thunb., *A. tenuifolium* Koidz., *A. Ginnala* Maxim., *A. ukurunduense* Trautv. & Mey., *A. nipponicum* Hara, *A. nikoense* Maxim., etc., belong to the former, while *Acer Mono* Maxim., *A. Miyabei* Maxim., *A. distylum* Sieb. et Zucc., *A. crataegifolium* Sieb. et Zucc., *A. argutum* Maxim. and most plants of *A. rufinerve* Sieb. et Zucc., are included in the latter. However, some of them, for example *Acer Tschoonoskii* Maxim., *A. micranthum* Sieb. et Zucc., *A. diabolicum* Blume, *A. pycnanthum* K. Koch, *A. cissifolium* (Sieb. et Zucc.) K. Koch, and *A. carpinifolium* Sieb. et Zucc., change their color to both red and yellow depending on the part of the crown.

Almost one thousand years ago, many classic poets of Japan in the age of Manyo wrote poems regarding the maples in nature. One of the most famous poems written in one of the classic poetry books of Japan is as follows:

“*Arashi fuku Mimuro no Yama no
Momijiba wa*

Tatsuta no Kawa no Nishiki narikeri”

A free translation of this is as follows:

“*Brilliance of maple on the hill,¹
Fragrant leaves blown by the blast,
Blazing brocade over the river,
Oh the real delight of Tatsuta.*”²

*Mr. Matsumura will be remembered by our readers for his fine article on “Fall Coloration, Nikko National Park, Japan” (Fall, 1949) of which garden he is the director.

1. Mt. Mimuro (of low elevation), Nara Prefecture.

As stated in the BULLETIN, Vol. XII, No. 3 (1949), many sightseeing places for maples are familiar in Japan. Among them Nikko, Hakone and Towada are superb with their reflection of autumn color on the surface of water at the lake side. On the other hand, Kankakei, Takao, Arashiyama, Eigenji, Shiobara, Myogi, Unzen and Jozankei are all famous for autumn tints of maples combined with a topographical beauty such as curious rocks and many kinds of valleys.

Description of Main Species†

1. *Acer Sieboldianum* Miquel (fig. 1)

Nom. Jap.: Ko-hauchiwa-kaede (small feather-fan-shaped maple) Tree; young shoots covered with whitish hairs; leaves papery, round, 6-8 cm. in diam., palmately cleft with 7-10 lobes, each lobe narrow ovate or broad lanceolate, acute at the apex, serrate, cordate at the base, pilose in young but almost glabrous in adult; petiole 3-4 cm.; inflorescence pendulous, peduncle 3-5 cm.; flowers 10 or more, double corymbose, pale yellow, 5-parted, small, sepals 3 mm. long, surface pilose, ovary with whitish hair; fruit almost glabrous, wing oblique, fruitlet with wing 1.5-2 cm. long.

Distribution: Hokkaido, Honshu, Shikoku and Kyushu.

Habitat: Mountain zone; horticultural varieties are cultivated in landscape gardens and Japanese tea gardens.

2. *Acer japonicum* Thunb. (fig. 2)

Nom. Jap.: Hauchiwa-kaede (feather-fan-shaped maple). Relatively larger leaves and fruits than *A. Sieboldianum*, giving most brilliant reddish dress to the mountains. Distributed in Hokkaido and

2. Name of river (or brook), Nara Pref.

†Mostly translated from Ohwi's *Flora of Japan* (1953).

- Honshu. Grows at a relatively high altitude of the mountains; several horticultural varieties are cultivated in gardens, especially in the north.
- 2a. *Acer Shirasawanum* Koidz.
Distributed in the west of Honshu, especially Shikoku. Leaves parted deeper than those mentioned above, and fruit medium in size between them.
 3. *Acer palmatum* Thunb. var. *amoenum* (Carr.) Ohwi. (fig. 3)
Nom. Jap.: Oh-momiji (large maple). Leaves and fruits are larger than the following.
Distribution: Hokkaido, Honshu, Shikoku and Kyushu.
Habitat: Mountain valleys; cultivated in gardens all over Japan.
 4. *Acer palmatum* Thunb. var. *palmatum* (Thunb.) (fig. 4)
Nom. Jap.: Takao-momiji (Takao maple, derived from Takao in Kyoto). Typical of all kinds of maples and representative of their beauty; the name Kaede, meaning maple, is derived from Kaeru-de (meaning frog paws). Tree; young buds pubescent, yellow brown, later glabrous; leaves almost round, papery, glabrous, 4-7 cm. in diam., cordate-truncate or slightly cordate at base, palmately parted $\frac{1}{2}$ - $\frac{1}{3}$, 5-7 lobed, each lobe lanceolate or broad lanceolate, apex acute, doubly serrate, petiole glabrous, slender, 3-5 cm. long, reddish; inflorescence glabrous, pendulous, 3-4 cm. long, 10 or more flowers on the stalk, corymbose-like; flower dark reddish, 4-6 mm. in diam., sepals oblanceolate, 3 mm. long, with brown hairs at the top, ovary glabrous or slightly pilose; fruit glabrous, wing 1.5 cm. long; about 60 horticultural varieties. Some varieties have red dress in spring just after leafing, and also in autumn, too.
Distribution: Honshu, Shikoku and Kyushu.
Habitat: Mountain zone, hillsides and river banks; cultivated in parks and gardens.
 5. *Acer palmatum* Thunb. var. *Matsumurae* (Koidz.) Makino (fig. 5).
Nom. Jap.: Yama-momiji (mountain maple). Most common in the mountains. Leaves deeper parted, almost divided, remarkably double-dentate, sometimes sharply serrate. Fruit 15-25 mm. long with wing; distributed Hokkaido, Honshu, Shikoku and Kyushu; many varieties and forms cultivated in gardens.
 6. *Acer Ginnala* Maxim. (fig. 6).
Nom. Jap.: Karakogi-Kaede (Chinese beauty maple). Shrub or small tree, branches glabrous; leaves ovate oblong, triangular ovate or ovate, sometimes 3-cleft in the lower half, 5-10 cm. long, 3-6 cm. wide, apex long acute, obtuse at the tip, side lobes acute, doubly serrate, thickly papery, glabrous on the upper surface, petiole 2-5 cm. long, glabrous; inflorescence branched on 2-3 cm. stalk, corymbose with numerous yellow-green, small flowers, sepals 2.5 mm. long; fruitlets glabrous or glabrate, 2.5-3.5 cm. long with wing, erect or oblique.
Distribution: Hokkaido, Honshu, Shikoku and Kyushu; also Korea, Manchuria and eastern Siberia.
Habitat: Mountains on relatively high slopes; rarely cultivated.
 7. *Acer Mono* Maxim. (fig. 7).
Nom. Jap.: Itaya-Kaede (cottage making maple). Biggest tree in nature, branches glabrous; leaves broad, 7-15 cm. diam., 5-7 lobed, cordate or truncate at base, glabrous on the upper surface, pubescent along the veins on the lower surface, each lobe triangular or slightly lanceolate, entire or repand, acute or short acuminate at the tip, petiole 4-12 cm. long, glabrous, or pubescent on side only; inflorescence short stalked, corymbose, 4-6 cm. in diam., sepals oblong, petals broadly oblanceolate; fruitlet glabrous but slightly hairy in young stage, erect or oblique, 2-3 cm. long with wing.
Distribution: Hokkaido, Honshu, Shikoku, Kyushu.

Habitat: Mostly high altitude or in north. Generally used for timber. Most conspicuous maple changing color to yellow in fall.

8. *Acer distylum* Sieb. et Zucc.

Nom. Jap.: Hitotsuba-kaede (one-leaved maple). Tree; branches brown hairy when young; leaves ovate, cordate, entire, 10-17 cm. long, 6-12 cm. wide, glabrous above, beneath brown hairy when young, dentate, long acuminate, petiole 3-5 cm. long, pilose when young; inflorescence pendulous, compact, racemose, shortly branched, 7-10 cm. long with 3-5 cm. stalk, pedicels 1 cm. long; flowers yellowish, 3-4 mm. in diam., sepals oblong, pilose outside, petals same size as sepals, lanceolate, stamens longer than calyx, fruitlets with brown hairs, erect and oblique, 3 cm. long.

Distribution: Honshu; not cultivated in gardens.

9. *Acer ukurunduense* Trautv. & Mey. (fig. 9).

Nom. Jap.: Ogara-bana (hemp stem maple). Tree; branch pubescent when young; leaves pentangular, roundish, 8-13 cm. long, 8-15 cm. wide, base cordate, the lower surface whitish, hairy around the veins, palmately 5 (-7) parted, each part broad triangular, apex acute, serrate and sharply dentate, petiole 6-12 cm. long, inflorescence erect, racemose, 10-15 cm. long with stalk 3-5 cm. long; flowers many, compact, brown pilose, pedicel 1 cm. long, flower yellowish, sepals broad lanceolate, about 1 mm. long, petals narrow lanceolate, 2 mm. long; fruitlet pubescent or almost glabrous, 1.5-2 cm. long with wing.

Distribution: Hokkaido, Honshu (eastern half), Shikoku and Saghalien, Korea, Manchuria, eastern Siberia.

Habitat: Subalpine coniferous zone and alpine shrub zone.

9a. *Acer nipponicum* Hara has pentangular leaves similar to *A. ukurunduense* but larger than that species; distributed in

the mountain zone of Honshu, Shikoku and Kyushu, but rare.

9b, c. *Acer rufinerve* Sieb. et Zucc. (fig. 12) and *A. argutum* Maxim. (fig. 13) also have pentangular leaves.

The former is distributed in all parts of Honshu, Shikoku and Kyushu while the latter is grown only from west of the Tokyo area to the south of Kyoto area in Honshu and Shikoku. These four are also rarely cultivated.

10. *Acer Tschonoskii* Maxim. (fig. 14)

Nom. Jap.: Mine-kaede (high mountain maple). Shrub or small tree and leaves 5-parted as in *A. micranthum* Sieb. et Zucc. (fig. 15). However, these two differ from each other in distribution. The former is one of the alpine species, distributed in coniferous and sub-alpine zone and alpine shrub zone of Hokkaido and northern part of Honshu. On the other hand, the latter is one of the species of the lower mountain zone of Honshu, Shikoku and Kyushu.

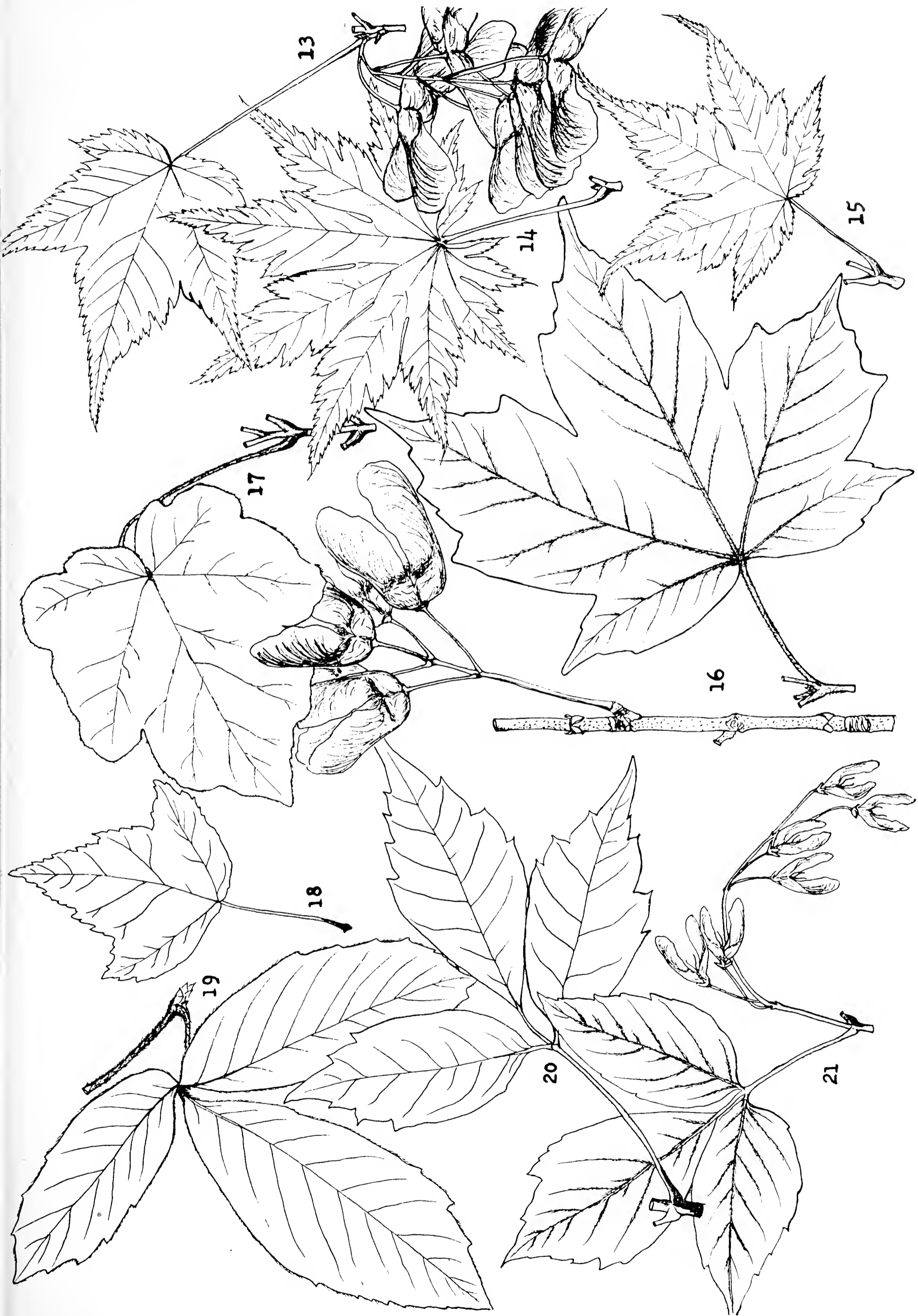
11. *Acer carpinifolium* Sieb. et Zucc. (fig. 10)

Nom. Jap.: Chidorinoki (hornbeam maple). Has simple leaves same as *Acer crataegifolium* Sieb. et Zucc. (Urikaede) (fig. 11). The former has oblong leaves, while the latter has ovate leaves. Both change their color to red and yellow as in the following species:

12. *Acer pycnanthum* K. Koch (fig. 18)

Nom. Jap.: Hananoki (flower maple). An old type of maple which has remained from past geological ages, rarely distributed only in a limited part of Honshu, that is Mino, Mikawa, Ohmi and southern part of Shinano; sometimes cultivated in the gardens of Buddhist temples. Tree; branches glabrous, but brown hair on the nodes when young; leaves glabrous, 3-parted, 4-7 cm. long, 3-8 cm. wide, deep green, powdered white on the lower surface, changing color to red and yellow in fall, base cordate or round, each part triangular or almost ovate triangular, apex acute, un-





even dentate; petiole glabrous, 3-6 cm. long; flowers dioecious, several flowers in winter buds at the side of nodes, pedicels glabrous, 5 cm. long, flowers opening before leaves, sepals in female flowers broad lanceolate or narrow ovate, 3 mm. long, petals reddish, small; fruitlets glabrous, wing 2 cm. long, erect.

13. *Acer nikoense* Maxim. (fig. 19)
 Nom. Jap. Megusurino-ki (eye drop maple). In addition to this, *A. cissifolium* (Sieb. et Zucc.) K. Koch (fig. 20) and *Acer Negundo* Linn. (fig. 21) also have three divided compound leaves. Among them the first is most rich in fall coloration and is distributed in all parts of Japan except Hokkaido; the second is grown all over Japan and the third was introduced from the U. S. A. and is cultivated everywhere.

14. *Acer Buergerianum* Miquel
 Nom. Jap.: To-kaede (Chinese maple). Most common garden maple, introduced from China many years ago to Japan. Small tree; leaves 3-lobed, blunt at the tip, thick, lower surface powder-white, 2-3 cm. long and wide. Tree generally pruned and sometimes used for Bonsai (dwarf trained trees). One more, the most popular maple in Japanese garden and Bonsai is *Acer ornatum* Carr., which has red dress in spring and also in autumn. Its Japanese name is "Chirimen-kaede" derived from a valuable silk crepe of Japan called "Chirimen" because of the texture of its leaves.

In closing this, the writer wishes to call attention to the fact that maples of any kind are never found as street trees in Japan so far as the writer knows, but most of them are used commonly for Bonsai and garden trees in Japanese tea gardens and landscape gardens or parks.

The writer wishes to acknowledge the work of Miss Ohta, who is one of his students and has drawn many illustrations for him, and also

to express his appreciation to Miss Shimidzu, who has given him a variety of help.

KEY TO THE SPECIES OF JAPANESE MAPLES

- | | |
|---|----|
| 1. Leaves simple | 2 |
| 1. Leaves 3 (-5) divided | 20 |
| 2. Inflorescence in terminal buds on short branches | 3 |
| 2. Inflorescence in axillary buds before leaves | 9 |
| 3. Inflorescence corymbose, paniculate or racemose, shortly branched at base.... | 4 |
| 3. Inflorescence racemose, main axis elongated | 10 |
| 4. Inflorescence corymbose or paniculate, main axis short | 5 |
| 4. Inflorescence racemose-like panicle, main axis elongated | 15 |
| 5. Leaves serrulate | 6 |
| 5. Part of leaves entire, slightly dentate.... | 17 |
| 6. Leaves palmately parted | 7 |
| 6. Leaves simple or 3 parted, side lobe short (1) <i>A. Ginnala</i> | |
| 7. Petiole and peduncle hirsute when young | 8 |
| 7. Petiole and peduncle glabrous | 18 |
| 8. Flower yellowish, anther scabrous; petiole 1/2 length of leaves or same length, leaves denticulate (2) <i>A. Sieboldianum</i> | |
| 8. Flower purplish, anther smooth; petiole 1/4-1/2 length of leaves (3) <i>A. japonicum</i> | |
| 9. Inflorescence racemose with short main axis; leaves and petiole hairy, leaflet acute, obtuse at the tip (4) <i>A. diabolicum</i> | |
| 9. Inflorescence without main axis; leaves and petiole hairy when young, leaflet acuminate (5) <i>A. pycnanthum</i> | |
| 10. Leaves simple, with 20 pairs of pinnate veins..... (6) <i>A. carpinifolium</i> | |
| 10. Leaves parted or simple, with 10 pairs of pinnate veins | 11 |
| 11. Leaves of inflorescence ovate or triangular ovate, simple or 3-parted, side lobes small | 12 |
| 11. Leaves of inflorescence always palmate, 5-9 parted | 22 |
| 12. Leaves 3-6 cm. long, petiole 1-3 cm. long, winter bud sessile (7) <i>A. crataegifolium</i> | |
| 12. Leaves 8-12 cm. long, petiole 3-6 cm. long, thick..... | 13 |
| 13. Pedicel 5-10 mm. long, leaves ovate or triangular ovate, if 3-parted, each part is lower | 14 |
| 13. Pedicel thick, 2-4 mm. long, leaves 3-parted in the upper part, sometimes with inconspicuous lobes (8) <i>A. rufinerve</i> | |
| 14. Petal entire, winged fruit less than 2 cm. long..... (9) <i>A. capillipes</i> | |
| 14. Petal dentate, winged fruit 2-2.5 cm. long..... (10) <i>A. insulare</i> | |
| 15. Leaves simple, roundish cordate or broad ovate, sinuate on the margin (11) <i>A. distylum</i> | |
| 15. Leaves palmately parted or 3-lobed, serrate or entire | 16 |

16. Leaves 3-lobed, entire
and thick (12) *A. Buergerianum*
16. Leaves palmately parted, serrate..... 16a
- 16a. Leaves coarsely serrate, winged fruit
1.5-2 cm. long, inflorescence
pubescent (13) *A. ukurunduense*
- 16a. Leaves serrulate, winged fruit 3-4
cm. long, inflorescence reddish-
brown hairy (14) *A. nipponicum*
17. Part of leaves entire or slightly
dentate, acuminate, glabrous
or hairy, ovary and fruit
glabrous..... (15) *A. Mono*
17. Part of leaves coarsely serrate,
acute both sides, fruit and
ovary hairy (16) *A. Miyabei*
18. Leaves 9-13 parted,
ovary pilose..... (17) *A. Shirasawanum*
18. Leaves 7-9 parted, ovary glabrous..... 19
19. Leaves membranaceous, papery,
whitish hirsute at the veins
on lower surface, irregularly
serrate..... (20) *A. tenuifolium*
19. Leaves thin, papery, serrulate, glabrous 19a
- 19a. Leaves slender, deep parted,
almost divided, in spring
red..... (18) *A. ornatum*
- 19a. Leaves star shaped, parted,
in spring green..... (19) *A. palmatum*
20. Flowers at end of branches, hairy
young shoots, lower surface of
leaves and inflorescence hairy,
petiole 2-3 cm. long.... (21) *A. nikoense*
20. Flowers long racemose, pilose,
leaves pilose or glabrous..... 21
21. Leaflets 3, even in size, ovary
glabrous or slightly hairy,
flower 4-merous..... (22) *A. cissifolium*
21. Leaflets 3-5, top one larger,
ovary pilose, flower 5-merous
(23) *A. Negundo*
22. Leaves with whitish hair on the
lower surface, flower 4-merous
(24) *A. argutum*
22. Leaves glabrous, or brown wool at the
veins on the lower surface..... 23
23. Flowers about 10, petals and stamens
about 4 mm. long, pedicels 8-15
mm. long (25) *A. Tschonoskii*
23. Flowers about 20, petals and stamens
1.5-2 mm. long, pedicels 4-6
mm. long..... (26) *A. micranthum*

EXPLANATION OF ILLUSTRATIONS

(figs. 16, 17)

Japanese Name	Latin Name
1. Kohauchiwakaede	<i>Acer Sieboldianum</i> Miquel
2. Hauchiwakaede	<i>A. japonicum</i> Thunb.
3. Oomoniji	<i>A. palmatum</i> Thunb. var. <i>amoenum</i> (Carr.) Ohwi
4. Takao-momiji (Iroha-momiji)	<i>A. palmatum</i> Thunb. var. <i>palmatum</i> (Thunb.) Rehd.
5. Yamamomiji	<i>A. palmatum</i> Thunb. var. <i>Matsumurae</i> (Koidz.) Makino
6. Karakogikaede	<i>A. Ginnala</i> Maxim.
7. Itayakaede	<i>A. Mono</i> Maxim.
8. Enkokaede	<i>A. Mono</i> Maxim. var. <i>dissectum</i> Nakai

9. Ogarabana	<i>A. ukurunduense</i> Trautv. & Mey.
10. Chidorinoki	<i>A. carpinifolium</i> Sieb. et Zucc.
11. Urikaede	<i>A. crataegifolium</i> Sieb. et Zucc.
12. Urihadakaede	<i>A. rufinerve</i> Sieb. et Zucc.
13. Asanohakaede	<i>A. argutum</i> Maxim
14. Minekaede	<i>A. Tschonoskii</i> Maxim.
15. Kominekaede	<i>A. micranthum</i> Sieb. et Zucc.
16. Kajikaede (Onimomiji)	<i>A. diabolicum</i> Blume
17. Kajikaede	<i>A. diabolicum</i> Blume
18. Hananoki	<i>A. pycnanthum</i> K. Koch
19. Megusurinoki	<i>A. nikoense</i> Maxim.
20. Mitsudekaede	<i>A. cissifolium</i> (Sieb. et Zucc.) K. Koch
21. Tonerikobano- kaede	<i>A. Negundo</i> Linn (cult.)

A Correction

In "New or Unusual Plants in the Arboretum" of the Fall, 1954, issue of this BULLETIN, *Sinojackia Rehderiana* was described and pictured. We now believe this plant to be *S. xylocarpa*.

As mentioned in the article, we received two plants from England in 1948-49, *S. Rehderiana* and *S. xylocarpa*. Both plants flowered for us this spring—the one labeled *S. Rehderiana* very well, *S. xylocarpa* only sparingly. However, the plant labeled *S. xylocarpa* set fruit this fall which fit the description of the fruit of *S. Rehderiana* (in "Jour. Arnold Arb.," Vol. XI, No. 4, p. 227, Oct., 1930). A thorough examination of the two plants indicates that the two labels must have been exchanged at some time past.

Sinojackia xylocarpa has a shortened, thick, indehiscent, woody fruit about 17 mm. long, with a short, rounded beak. It is hardly 1½ times as long as wide. The leaves tend to be elliptic and the habit erect.

S. Rehderiana has an elongated fruit, 29-30 mm. in length, with a long, sharp beak, almost three times as long as wide; leaves are more obovate and the plant has a shrubby habit.

The caption of the photograph on p. 79 (fig. 12) and other references to the Arboretum plant should therefore be changed to read *S. xylocarpa* instead of *S. Rehderiana*.

B. O. M.

J. A. W.

An Upright Oregon Maple

B. O. MULLIGAN

THIS TREE, which was first noticed by the author growing at 18th Ave. and Madison St., Seattle, in the winter of 1951, appears to be the first recorded example of a fastigate form of the western species of *Acer macrophyllum* (fig. 18); others are, of course, known in the Norway, red and sugar maples, although seldom seen in this region.

As it is now being propagated, both in the Arboretum and elsewhere, it is necessary to

provide a name for this horticultural form. Accordingly, "Seattle Sentinel" has been chosen as indicating both the place of origin and the form of the tree, which is some 50 feet in height with a crown diameter of about 12 feet. The photograph, which first appeared in the magazine "Trees" in October, 1952, shows the characteristic habit of this remarkable tree during the winter. Unfortunately, nothing has been learned of its origin.



Oregon Maple "Seattle Sentinel" in winter. (Fig. 18)

—COURTESY "TREES" MAGAZINE

Maples for Park and Garden Use as They Grow in the Arnold Arboretum

DONALD WYMAN *

THE MAPLES are a very essential group of trees to be considered in making almost every kind of ornamental planting. In the parks and gardens of this country they are truly outstanding and bear much consideration. They vary in height from 15 feet to standard trees over 75 feet tall. They vary in habit from the small, rather mounded Japanese maple types, to the standard tree, some globe-shaped, some rounded, some pyramidal and some columnar. They are valued for the shade they create, for the color of their leaves in the early spring and some throughout the growing season. Many of them have outstanding autumn color. All in all they can be considered as among the best of our shade trees.

There are 120 different species and varieties growing in the Arnold Arboretum in Jamaica Plain, Massachusetts. Not all of these merit growing by commercial nurseries, for some species are very similar to others. As far as hardiness is concerned, all those mentioned here are hardy in Boston, except during the most severe winters. Rather than give individual descriptions of each species and variety (which descriptions are easy to find elsewhere), it might be better for the purpose of this article to discuss these maples in groups according to their various uses in ornamental planting.

1. Shade

Maples are trees with rather dense growth habits, making the majority of them producers of good shade. The Norway maple (*Acer platanoides*) is the classic example, for it grows normally with wide-spreading branches that, when they nearly sweep the ground, provide such a dense shade that nothing else can grow under them. On the other hand, the

columnar types throw very little shade. Some, like *A. griseum*, *mandshuricum*, *nikoense* and *pensylvanicum*, usually produce only a light shade. However, most of the rest are good shade trees, within the limits of their respective habits and growing conditions. These maples then, if growing in good soil with sufficient moisture, will usually produce good shade.

2. Foliage Color

Most trees have leaves that are green throughout the growing season, but among the maples there are several which have variegated leaves and some with red leaves. Some color variation may be desirable under certain conditions, but it must be admitted that many a tree with white or yellow variegated foliage is hard to work properly into the landscape scheme. On the other hand, there are some of the smaller trees, like the Japanese maples, which have brilliant red foliage early in the spring, retaining this red foliage through the growing season. The "Crimson King," a variety of the Norway maple, is an excellent tree for keeping its good red foliage throughout spring and summer. It does not gradually turn greenish in the early summer as does the common Schwedler maple. Also, the newer varieties of the Norway like "Faassen's Black" may hold their dark purplish color throughout the growing season as well. Some maples with foliage colors other than green are:

Red

japonicum aconitifolium

palmatum atropurpureum

ornatum

sanguineum

platanoides "Crimson King"

"Faassen's Black" (dark purplish)

Schwedleri (red in spring only)

Pseudo-Platanus purpureum (leaves purple beneath)

*Dr. Wyman, Horticulturist at Arnold Arboretum and author of renown, is such a busy person we feel always most honored to capture some of his time and bring these authoritative writings to our pages.

Variegated

Negundo auratum (yellow)
aureo-marginatum (variegated with yellow)
aureo-variegatum (variegated with yellow)
variegatum (variegated with white)
Pseudo-Platanus "Prinz Handjery" (leaves yellow above, purple beneath)
Worleei (yellow)

There are other variegated forms of all these species, but these are the only colorful ones growing in the Arnold Arboretum that keep their colors throughout the growing season.

Autumn Color

Many of the maples turn a brilliant red in the fall and so are valued especially for their autumn color. Others turn yellow, while some like the hedge maple from Europe (*Acer campestre*) do not turn any autumn color. Some of the best for their autumn color are as follows:

Red

circinatum (orange and red)
cissifolium (red and yellow)
Ginnala
griseum
japonicum aconitifolium
mandshuricum
nikoense (red to purple)
palmatum vars.
platanoides "Crimson King"
rubrum (occasionally yellow)
rufinerve
saccharum (yellow and red)
Sieboldianum (reddish)
spicatum (red and yellow)
tataricum
triflorum

Yellow

Davidi (yellow and purple)
pensylvanicum
platanoides
saccharinum
Tschonoskii

None

campestre
capillipes
Negundo
Pseudo-Platanus

Brownish

carpinifolium
truncatum

3. Habit

It goes without saying that these trees are frequently planted for the various natural shapes they take on as they mature. Some specifically of ornamental value for this important characteristic are:

a. Columnar

platanoides ascendens
columnare
erectum
rubrum columnare (see fig. 19)
saccharum monumentale

b. Slightly pendulous

saccharinum and varieties

c. Rounded to globe shaped

campestre
Ginnala
japonicum aconitifolium
palmatum (some varieties)
platanoides globosum

d. Slightly vase-shaped

capillipes
carpinifolium
cissifolium
palmatum (some types)
Sieboldianum
Tschonoskii

Most of the others mentioned in this article are more or less rounded to upright or pyramidal in general habit. Examples would be the rounded form of the Norway maple (*A. platanoides*) to the more upright to pyramidal Sugar maple (*A. saccharum*).

4. Size

With many a home owner wanting a smaller tree, under 35 feet in height at maturity, there is a great interest in the maples, for among them are many interesting trees in this very category. There will always be need of the standard tree, but these smaller ones are becoming more and more called for in home

plantings. Some of them, unfortunately, are extremely difficult to find in commercial nurseries. In any event, here is a list of some in three different size groups, that is, in the sizes within which limits they are usually used:

15 to 25 feet

<i>argutum</i>	<i>tataricum</i>
<i>palmatum</i> and vars.	<i>triflorum</i>
<i>platanoides globosum</i>	<i>truncatum</i>
<i>spicatum</i>	<i>Tschonoskii</i>

25 to 35 feet

<i>campestre</i>	<i>griseum</i>
<i>carpinifolium</i>	<i>mandshuricum</i>
<i>circinatum</i>	<i>pensylvanicum</i>
<i>cissifolium</i>	<i>rufinerve</i>
<i>Davidi</i>	<i>Sieboldianum</i>
<i>Ginnala</i>	<i>triflorum</i>

50 feet plus

<i>cappadocicum</i>	<i>Pseudo-Platanus</i>
<i>Negundo</i>	<i>rubrum</i>
<i>nikoense</i>	<i>saccharum</i>
<i>platanoides</i>	<i>saccharinum</i>

5. Bark

- A few have interesting bark. They are:
- Acer capillipes*—bark green and white-striped
 - Davidi*—bark green and white striped
 - pensylvanicum*—bark green and white-striped
 - rufinerve*—bark green and white-striped
 - pensylvanicum erythrocladum*—winter twigs bright red
 - griseum*—bark exfoliating in paper-like strips
 - rubrum*—and several others—bark gray
 - triflorum*—bark exfoliating

6. Flowers and Fruits

A few like *A. circinatum*, *platanoides* and *rubrum* are of interest in the very early spring because of the multitude of small flowers they produce before the leaves appear. These give the Norway maple a bright yellow over-all

(Continued on Page 130)



Acer rubrum columnare
(Fig. 19) —COURTESY ARNOLD ARBORETUM

Many Little-Known Maples Ready for Extensive Use

EDWARD H. SCANLON *

WHETHER you are 9 or 90 years old probably the only maple species you have ever heard of or seen could be found among the following:

(1) The ubiquitous and troublesome silver maple (*Acer saccharinum*). This tree, used only because of its ultra-rapid growth, has cost American cities and home owners millions of dollars to eradicate, and additional millions for repairs to sidewalks, sewers and broken power lines. The nursery trade should hang its head in shame for foisting this Frankenstein monster on the public, but public officials also should have known better.

Number two (2) on the list is the familiar Box-elder (*Acer Negundo*). This is a brittle, fast grower that should never have been considered in any area where another maple will thrive. (3) Sugar or Rock maple (*Acer saccharum*). One of the glories of an Eastern and mid-Western fall landscape. The Sugar maple is a long-lived tree growing to majestic proportions and should be used carefully. It does not like soil compaction or the atmospheric pollution of cities. (4) In the fall *Acer rubrum*, the Red maple, is the flame of Eastern countrysides and suburban areas. Seldom attains king-size in ornamental sites and should be used much more, if for no other reason than its magnificence of fall color. Number five (5) on the list is an exotic, the Norway maple (*Acer platanoides*). A widely used street and shade tree in Eastern towns and cities, the Norway has much to recommend it, but the species has one serious defect. Seedling trees of this species have little tendency to maintain uniformity of branching, foliage or form characteristics. This fault renders the use of seedlings a rather precarious practice for street use where, because of restricted space and other site factors, definite knowledge of what form and appearance the selected tree will assume is of

considerable importance. Having been a long-time admirer of this species, the writer, upon assuming the post of Commissioner of Shade Trees for the City of Cleveland, Ohio, some eight years ago, began a program of selection in this species. More about these selections later.

The last, number six (6) of the common maples is the Oregon or Bigleaf maple (*Acer macrophyllum*). Here is a huge, coarse-leaved, brittle-branched tree that has little to recommend it except its fast growth; however, its many faults blot out this dubious quality.

These are the dominant maples on the American scene. But there is definitely an awakening to the fact that there are more species than these few from which to choose for our streets and homes. Some of the most beautiful and priceless gems of the tree family exist in the maple group. These trees have been growing in various places throughout the country for upwards of fifty years—ample time in which to evaluate their habits and worth. Most of them have been established in the Botanic Gardens and arboreta, others in private collections. Few of them, entirely too few, have found their way into the nursery trade, and then only here and there by some connoisseur who recognized the great beauty and value they possessed but strangely enough didn't have the ability or push to "sell" these fine qualities to the public. Also, sadly enough, he received little help or encouragement from the garden magazines.

It is too bad that such beautiful trees as these little-known maples, as well as many other fine species, could not be featured in color in a book on trees, like the various books on bulbs, roses and other such lesser plants. It would be a most revealing thing and would certainly build up a terrific demand for these treasures. Once people see trees of this character they want them—a fact to which we can attest.

*Mr. Scanlon is consulting arborist and editor of *Trees* magazine, Olmsted Falls, Ohio.

First to be mentioned in this art gallery of tree treasures is the Purple Blow maple (*Acer truncatum*). This dainty little tree from China grows to about 25 feet. It receives its name from the deep purple hue of the unfolding terminal foliage. This quality is strongest in spring and early summer, but the fall color is quite spectacular. The small, dainty, star-like leaves resemble a miniature Sweet Gum and they have a charming sparkle and dance in a light breeze. It takes time to grow this tree to a nice standard, which probably accounts for one reason why the bargain counter nurseries have never heard of it.

There will probably be some jeers with the mention of the Sycamore maple (*Acer Pseudo-Platanus*), but this tree and three of its varieties rate high upon my list for beauty and utility. Under very favorable conditions the species may become a quite large tree, but under the adverse conditions encountered on street sides it will seldom go over 30 feet. You know this tree does well in dry, hard soil. Almost every time we get into a discussion of trees with anyone we ask if they know anything detrimental to this tree—the answers so far have been “no.” But actually it was not the species that was to be featured, but rather the three very lovely and utilitarian varieties—the wine-leaved (my name for it) (*A. P. Spaethi*) with the rich dark green top and the Burgundy wine-colored underneath part of the leaf. This tree is striking and patrician, vastly superior to the funereal-appearing maples that have been best sellers for several years. When the wind ruffles the nice rounded foliage of this tree you are treated to a rare symphony of color as the wine-and-green leaves undulate. It is difficult to understand why this colorful and dignified tree is not as common as the silver maple, but there is no accounting for nurserymen’s taste. The second variety in the species *Pseudo-Platanus* is *Worleei*. Its new foliage unfolds in a burst of rich golden yellow. This color is maintained for about a month in spring, then the foliage assumes a light green tone. A very lovely and very handsome plant. The new

addition to this versatile group is the recently introduced variety *erectum*. While we have seen only pictures of semi-mature specimens, the form is quite Lombardy-like, and with the characteristic heavy suite of dark green foliage gives great promise of being an eminently useful street and ornamental tree among the uprights that are rapidly gaining the recognition they deserve for their high functional and esthetic qualities. The species originated in Europe and Western Asia and has been cultivated for centuries.

A handsome little maple from the Northwest is the Vine maple (*Acer circinatum*). It is hardy in the East in Zone 5, and we are busy now growing a number of them in standard form to prove their value as fine ornamentals. The unusual and beautiful eight-tipped roundish leaves of light bright green turn a magnificent orange red in the fall, while the bright green twigs and branches enhance the plant throughout the winter.

Two small maples from Japan and China, respectively, are quite similar in appearance. They are the Japanese striped-bark (*Acer capillipes*) and David’s striped-bark maple (*Acer Davidi*). These two trees, to 20 feet, have extremely interesting blackish and green striped bark, the foliage turns a bright red in the fall and generally they form a very pleasing picture at all seasons. The only real difference in the trees is, outside of a small distinction in the form of the leaf, that the petiole of *Davidi* is green, that of *capillipes* red.

Perhaps one of the oddest of all maples is the Hornbeam maple (*Acer carpinifolium*). If you didn’t see this tree in seed you would bet the family jewels it was a *Carpinus*, certainly never an *Acer*. It makes a nice small tree to about 20 feet and can be trained to a leader form without too much trouble. No fall color, but a handsome and quite out-of-the-ordinary maple from Japan.

A small, excellent maple from western Europe has somehow been dubbed the English hedge maple (*Acer campestre*). This tree is perhaps one of the better-known of the

unknowns. It has not been more widely used because it is slow and difficult to grow in standard form. However, its durability and general over-all good behavior, as well as its ability to withstand adverse conditions, merit it a place in the sun. It is trees with the character of the hedge maple that should sweep into the programs of street tree planters. Their small trunks can be contained in narrow planting spaces along streetsides without causing the rash of sidewalk disorders that have doomed the big forest giant maples to expensive last resting places in city dumps. The small rounded crowns of such trees adapt them to harmonious use in conjunction with power lines, because, if selected with good judgment, they will not cause expensive line clearance and dangerous, troublesome power cuts. The hedge maple has no spectacular features, but it has dignity and soundness.

Another tree of unusual hardiness (Zone 2) is the Amur maple (*A. Ginnala*). Its flaming red rugose-like leaves in the fall make it worth a special effort to grow it in standard form. It would make a magnificent small tree which, with proper management, could be induced to attain twenty feet. Its natural inclination is toward the shrubby side, but rare specimens that have been observed growing as standards definitely prove that this plant bears serious consideration. The ability to endure poor site conditions is another strong point in its favor where sound street tree management is practiced.

A small Chinese tree that is finding its way gradually into use in the East is the Trident maple (*A. Buergerianum*). It is another small, round-headed tree, dense crowned and with brilliant red fall color. It, too, needs some training to bring it to standard form, but it has met with a popular reception, particularly by the public, and arborists are beginning to show an interest in it for street tree use.

The most spectacular and exciting of all exotic maples, in the opinion of the writer, is the paperbark, or what we think is a much nicer and more descriptive name, the Cherry-bark maple (*Acer griseum*). This tree is as

rare as the Mona Lisa and almost as difficult to obtain as a painting of such quality. The seed requires two years for germination and the percentage, in most years, of viable seed is very low. To the best of our knowledge no other method of propagation has been attempted. Its smooth, bronzy, cherry-like bark peels into thin, coppery ribbons much like the paper birch, while its trifoliate foliage is a fresh bright green that turns brilliant crimson in the fall. Its use should be reserved for home grounds and special displays where it will receive some degree of protection from vandals. The losses that are bound to occur in street use would break the heart of anyone who appreciates the finer things in the tree world, and this magnificent collector's item is just that.

When the writer undertook the establishment of a street tree management program in Cleveland eight years or so ago, it was quite apparent that a wide variety of functional forms was an essential to the successful accomplishment of such an undertaking. There were a few upright, globe and small tree species and varieties being grown commercially in several nurseries, but only in very small quantities—not nearly sufficient for a program such as was contemplated.

A program of selection was begun, and from the wealth of trees in and around Cleveland, six selections of unusual merit were finally made. Three were Norway selections (*A. platanooides*), and three were red maple (*A. rubrum*). The Norways comprise an oval upright form that we named the "Cleveland" maple. This tree is a beautiful thing with an up-sweeping, almost upright, branching habit that gives the clothed tree a beautiful oval form. The foliage is larger and darker than the species and it reproduces exceptionally well by budding. Another form that should add immeasurably to the value of the Norway maple as a uniform street tree is one we named for an eminent American arborist, Charles F. Irish. The writer's only serious criticism of the Norway species is that seldom do two seedlings have the same form. The result is

(Continued on Page 131)

Notes on Species of Maples to Be Found In Seattle's Parks and Streets

ROLAND KOEPF*

ALTOGETHER there are somewhere over 210 classified species of maple in the world. It seems a little odd, therefore, that, although a long-time favorite for park and street planting, so few species out of the whole category have found their way into landscape use.

Not counting some of the less well known and newer introductions, which quite possibly are cached here and there in private gardens, and a number of very young trees of new varieties planted in the Arboretum, one could quite safely say that hardly a dozen kinds of maples are represented in park and street plantings.

Following is a list of those species noted in our parks and along the streets and boulevards. These have been listed in the order of frequency of occurrence:

1. Big Leaf or Oregon Maple (*Acer macrophyllum*)
2. Norway Maple (*A. platanoides*)
3. Sycamore Maple (*A. Pseudo-Platanus*)
4. Silver Maple (*A. saccharinum*)
5. Red or Scarlet Maple (*A. rubrum*)
6. Sugar Maple (*A. saccharum*)
7. Japanese Maple (*A. palmatum*)
8. Hedge or English Corkbark Maple (*A. campestre*)
9. Vine Maple (*A. circinatum*)
10. Box Elder Maple (*A. Negundo*)
11. Striped or Moosebark Maple (*A. pennsylvanicum*)

Big Leaf or Oregon Maple

This is our own native, too well known and easily recognized to need further description. It has a very vigorous growth habit, often attaining a height of 75 feet and even more. Of all the species of maples found on our city streets, this one appears most frequently. Because of its size and rank growth it is also the most unsuited for street use.

Norway Maple

This species has been used quite extensively for street and park planting and has most of the desirable features sought for. It is a tree of medium height, getting up to only 40 or 50

feet. It forms a good, compact, round head and is of general good appearance.

A fine, typical specimen may be seen in Volunteer Park, located on the south side of the boulevard and just west of the children's wading pool. You can also see the Norway planted all along the south side of Woodland Park, next to the street.

Sycamore Maple

Closely resembles the Norway in general form and appearance, although it usually grows somewhat taller, 60 feet or better. It is excellent as an avenue tree where overhead clearance permits.

Ravenna Boulevard from Roosevelt Way westward to Green Lake shows a good example of this species used as an avenue tree.

Silver Maple

A fine species of maple, but wholly unsuited for home gardens or for our street parking strips. It is a very tall tree, reaching as high as 100 feet, with long upward and spreading main branches. The summer foliage is silvery underneath, becoming bright yellow as fall approaches. Its oversize and robust habit cause it to be constantly in conflict with overhead wires. It will also quite often test its strength at lifting concrete sidewalks.

Not as frequently used as some other kinds of maple for street trees, nevertheless one can find them quite easily in the older Capitol Hill district and eastward to the Madrona neighborhood, some likewise on First Hill, too.

For identification, a good specimen is located at the southeast corner of Volunteer Park. A very old tree, perhaps the largest of its kind, will be found in Kinneer Park, about 150 feet north of the park building.

Red Maple

Not very often seen as a street tree here, yet in certain respects some of the small forms of this species should hold a great deal of promise. It varies considerably in height according to the variety and also because of

*Mr. Koepf is director of horticulture and forestry of the Seattle Park Department.

soil conditions. Ordinarily it is a swamp tree in the east where it is native. Those that we have observed growing here show reasonably good habit and are most desirable because of the coloring of the spring and fall foliage. As may be surmised from the name, the tree is red. Even the twigs and branchlets are red, and the buds on opening are brilliant red. The fall foliage is brilliant scarlet.

Some examples may be seen growing in the parking strip on Lake Washington Boulevard, between Pine and Olive Streets. There is a good specimen in Volunteer Park to the west of the boulevard and west by north from the bandstand.

Sugar Maple

Grows to be a tall tree, 60 feet or more, and with an upward and often inward sweep to the branches, resulting in a fairly compact tree. If there is sufficient head room this is a tree worth growing. Its brilliant yellow and scarlet fall foliage is very colorful.

It appears as though the local nurserymen almost ignored this species in the past. At least one has to do quite a bit of scouting around town to find any. There are some planted in the parking strip on the east side of Latona School on Fifth Ave. N.E., between N. 41st and 42nd.

Japanese Maple

When it comes to ornamental maples on the dwarf side that one can use safely in the small yard, in the rock garden or around the house, without fear of later having to move out because the tree has completely taken over, this leads the field.

Familiar to almost everyone and to be seen in so many home gardens, further description should hardly be necessary. Their beautiful cut-leaf foliage, ranging from very light green in some to bronze and even maroon in others, makes them popular favorites for home and park landscaping. Because of their dwarf and irregular habit, however, they do not lend themselves well to street planting.

Hedge or English Corkbark Maple

Seldom found along our streets, although one of the best suited because of its low stature and compact round head, this species

seems almost to have been overlooked. Where overhead wires threaten to be a problem this tree is a welcome solution. We can't say too much, however, for its attractiveness because the foliage tends to be rather on the somber side.

Some good examples can be seen in the children's play area at both Broadway and Garfield Playfields. There are some very old specimens, scarcely 30 feet high, near Lakeside South, in Leschi Park, and others along Lake Washington Boulevard in the Arboretum south of Interlaken.

Vine Maple

One of our lovely small natives, found occasionally in and around Seattle, but in more abundance up in the Cascades. Its vivid scarlet fall coloring is a delightful sight on the mountainsides.

The Vine Maple is really a shrub, and, although one is likely to see one now and then trained as a tree, the results are usually tortured and grotesque. They are best left to their own will and should be used only in natural plantings, never as a street tree.

Box Elder Maple

For some reason this tree has not found favor here, nor has much been lost thereby, either. It is a rather tall-growing tree with very spreading branches, generally quite unsuited to the city lot or the street.

There is an albino form growing in Leschi Park, towards the north side of the park.

Striped or Moosebark Maple

Not a large tree, but very attractive for its white-striped bark and large, slightly lobed leaves. A native of the New England states and lower Canada, it is rarely seen in Seattle.

From our experience with this species we would suggest that it be used only in gardens and not as a street tree.

Several small specimens are growing out at Government Locks. You will find them alongside the driveway that overlooks the locks. You can also find it used in shrub form in Volunteer Park. There is one plant located east of and quite near the path that parallels 15th Avenue North, about 250 feet north from E. Prospect Street.

Germination of Maple Seeds

L. J. MICHAUD, B. O. MULLIGAN and J. A. WITT

The following 15 species, out of 30 sown between 1947 and 1954, have given fair to good and usually rapid germination when stratified in cans of damp peat in a refrigerator at 41° F. for the indicated time. The date of sowing is determined by the condition of the seeds at periodic examinations.

SPECIES	STRATIFIED	GERMINATION TIME & RESULTS	NOTES
<i>Acer Buergerianum</i> var.	78 days	12 days; good	Seeds from California
<i>A. capillipes</i>	none	14 days; good	Seeds from England
<i>A. carpinifolium</i>	48 days	2 days; good	Japanese seeds
<i>A. crataegifolium</i>	74 days	9 days; good	Japanese seeds
<i>A. Davidi</i>	none	9 days; very good	Seeds from California
<i>A. diabolicum</i>	75 days	11 days; fair	Japanese seeds
<i>A. Ginnala</i>	41 days	9 days; good	Seeds from U.S.D.A., Md.
<i>A. Grosseri</i> (?) (F. 21337)	none	8 days; very good	{Seeds from England
<i>A. Grosseri</i> (?)	29 days	8 days; good	{sent as <i>A. Forrestii</i>
<i>A. micranthum</i>	145 days	About 7 mos.; very good	Seeds from Rochester, N. Y. Sown 7/53; flat in frame outdoors through winter
<i>A. oblongum</i>	42 days	6 days; fair	Seeds from China
<i>A. Oliverianum</i>	82 days	8 days; good	Seeds from China
<i>A. palmatum</i> vars.	none	About 5 mos.; very good	Arboretum seeds sown in fall, left in frame outdoors through winter
<i>A. Paxii</i>	84 days	8 days; good	Seeds from California
<i>A. tetramerum</i>	113 days	21 days; fair	Seeds from England
<i>A. sp.</i> (K. W. 9511)	42 days	12 days; fair	Probably <i>A. Campbellii</i>

The source of seeds appears to have no bearing on the results, except in *A. Ginnala* (see also following list). If they are viable and are properly treated for each species, germination should take place in from 7-14 days in most instances.

Of the remainder, a few have taken much longer than usual to germinate but eventually produced a satisfactory number of seedlings: they include:

<i>A. circinatum</i>	Not strat.	Sown in flat, fall 1951; poor to fair germ., Spring 1952; fair in Spring 1953	Native seeds
<i>A. Ginnala</i>	Strat. 46 days	Sown 1/48; very good germ. 4/49	Seeds from England
<i>A. Miyabei</i>	Strat. 93 days	Sown 8/49; germ. 4/51	Seeds from U.S.D.A., Md.
<i>A. Miyabei</i>	Not strat.	Sown 1/49; germ. 3/50	{Seeds from Arnold
<i>A. Mono</i>	Not strat.	Sown 1/49; germ. 3/50	{Arboretum
<i>A. ornatum</i> var.	Strat. 93 days	Sown 8/49; germ. 4/51	Seeds from Japan

Finally, we have several species which have given unsatisfactory results; whether the fault lies with the seeds themselves, or with our method of treatment, only much more experiment will show—when seeds are available in sufficient quantity for the purpose.

<i>A. erianthum</i>	Strat. 82 days	Sown 5/49; poor germ. 3/51	Seeds from Edinburgh. Outside in frame from fall 1949 to spring 1951
<i>A. glabrum</i> var. <i>Douglasii</i>	Strat. 121 days	Sown 5/49; poor germ. 1/51	As above; native seeds
<i>A. griseum</i>	Strat. 29 days	Sown 1/48; fair germ. 4/49	Seeds from England
<i>A. griseum</i>	Not strat.	Sown 1/49; poor germ. 3/50	Seeds from Arnold Arb.
<i>A. Hersii</i>	Strat. 54 days	Sown 3/48; poor germ. 4/48	Seeds from England
<i>A. laxiflorum</i>	Strat. 30 days	Sown 5/54; poor germ. 6/54	Seeds from Germany
<i>A. nikoense</i>	Strat. 113 days	Sown 5/49; poor germ. 6/49	Seeds from England
<i>A. pennsylvanicum</i> *	Strat. 53 days	Sown 6/48; no germ.	Seeds from N. Y. Bot. Gdn.
<i>A. pennsylvanicum</i> *	Strat. 128 days	Sown 8/48; no germ.	Seeds from Montreal Bo. G.
<i>A. pennsylvanicum</i> *	Strat. 67 days	Sown 4/50; poor germ. 4/50 and 3/51	Seeds from Montreal Bo. G.
<i>A. Sieboldianum</i>	Strat. 136 days	Sown 4/49; poor germ. 4/49, fair in 4/50	Seeds from England
<i>A. triflorum</i>	Strat. 96 days	Sown 3/51; poor germ. 3/51	Seeds from England

*Has consistently given the poorest results.

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Special Notice

To keep memberships in the Arboretum Foundation in good standing, dues should be paid during the month payable. Active memberships more than three months in arrears will be dropped and THE BULLETIN will be discontinued.

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I hereby apply for membership in the Arboretum Foundation and remittance for same is enclosed to cover dues for the next succeeding 12 months.

Name.....

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All memberships are non-assessable.

Notes and Comment

The Arboretum Foundation Annual Membership Meeting, held October 19 in the Women's University Club Auditorium, was especially well attended this year and much credit is due Mrs. Hazel Pringle, Chairman of Arrangements, for its success.

Mr. E. H. M. Cox of Perthshire, Scotland, who, with his charming wife, was touring the United States and Canada, highlighted the evening with a talk on "Scottish Gardens," illustrated by colored slides and films. We are most grateful to have had Mr. Cox with us and so graciously contribute to the success of the meeting.

Prior to the meeting members of the Board of Directors and their guests honored Mr. and Mrs. Cox at dinner in the Club dining room. Mrs. W. F. Paddock, in charge of the dinner, is to be complimented for the very nice turnout—135 members.

The annual election was held with the following Arboretum Foundation officers for the 1954-55 year installed:

Edward L. Rosling, President
Clinton S. Harley, Vice-President
Albert F. Hull, Vice-President
Mrs. Hazel Pringle, Vice-President
Miss Annie McFee, Secretary
Roy L. Maryatt, Treasurer

New members of the Board of Directors elected were: Mrs. Homer Bergren, Roscoe Drummond, Mrs. Richard E. Fuller, Raymond L. Gardner and Mrs. W. Byron Lane, all of Seattle, and Mrs. Edward Everett Willkie, Bellingham; F. Arnold Polson, Hoquiam; Mrs. Charles T. Donworth, Olympia, and D. N. Gellatly, Jr., Wenatchee.

Board Members re-elected for a one-year term were: Mrs. E. A. Antes, Cebert Bailargeon, Mrs. J. Swift Baker, Mrs. Don R. Baker, Mrs. Carl McN. Ballard, Mrs. Clarence Blethen, William Blethen, Mrs. Prentice Bloedel, Mrs. Lawrence Bogle, Mrs. B. D. Bramhall, Mrs. James Brennen, Mrs. Frederick A. Bunge, Mrs. Frank Calvert, Mrs. Wm. Calvert, Jr., M. M. Chism, Mrs. John A. Clark, Newman Clark, Mrs. J. Thomas Dowling, Edward B. Dunn, Mrs. Allen B. Engle, Mrs.

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Mrs. John Pierce, Bellingham; Mrs. R. E. Hensel, Bremerton; Mrs. R. L. Rutter, Jr., Ellensburg; Burke Barker and John A. Green, Everett; V. I. Whitney, Montesano; Mrs. G. O. Moen, Mt. Vernon; Mrs. Walter B. Beals, Olympia; Mrs. George Cropper, Shelton; Mrs. Charles Finucane, Joel E. Ferris, Lawrence R. Hamblen and Roderick A. Lindsay, Spokane; Mrs. Roger W. Peck, Mrs. Howe Rushmore, Mrs. Corydon Wagner and Mrs. Philip Weyerhaeuser, Tacoma; Mrs. Fred Mason, Vancouver, and Lyman J. Bunting, Yakima.

✓ ✓ ✓

October 28, 1954, was a busy day for our Unit Members—the Annual Arboretum Unit Plant Sale held that day netted a profit to the Unit Treasury of \$2,342.28. Mrs. Frank Preston, Chairman, and Mrs. Frank Calvert, Co-Chairman, wish to thank all those who served on the committees—a faithful and generous group who always seem to be willing to be on hand to dig, wrap, sort, price and sell the abundance of plant material. Members of the Raines Arboretum Unit No. 35, Mrs. E. H. Gaillac, Chairman, are to be again thanked for officiating in the Clubhouse in serving a “Snack Bar Lunch.”

The McMahon Rhododendron Gift

DURING November, 1954, the Arboretum received as a gift the most extensive collection of rhododendrons since the Tenny collection in the spring of 1938, from the garden of Mrs. Theresa McMahon on Mercer Island, where a wide variety has been assembled and cared for over a period of many years.

Both species as well as many of the best modern hybrids are represented by fine specimens of some size in the plants which the Arboretum has now acquired, as the following partial list, with heights, will indicate.

Species

<i>Bureavii</i> (5 ft.)	<i>glaucophyllum</i> (3½ ft.)
<i>campanulatum</i> , (5 ft.)	<i>haematodes</i> (2½ ft.)
Knap Hill form	<i>neriiflorum</i> (5 ft.)
<i>campylocarpum</i> (4 ft.)	<i>orbiculare</i> (5 ft.)
<i>croceum</i> (6 ft.)	<i>rex</i> (6 ft.)
<i>exquisitum</i> (6 ft.)	<i>sperabile</i> (3 ft.)
<i>fulgens</i> (4 ft.)	<i>Thomsonii</i> (7 ft.)

Hybrids

“Aladdin” (9 ft.)	Loderi “King George” (4 ft.)
“Albatross” (6 ft.)	Loderi “Venus” (4 ft.)
“Bow Bells” (5 ft.)	“Mars” (5 ft.)
“Electra” (3½ ft.)	“Mrs. D. G. Graham” (6 ft.)
“Flame” (4 ft.)	“Romany Chal” (7 ft.)
“Gill’s Crimson” (4 ft.)	“Souldis” (4½ ft.)
“Lady Chamberlain” (5 ft.)	“Van Nes Sensation” (5 ft.)
“Lodauric” (6 ft.)	

The total numbers are: species 25, hybrids 30 kinds. In most cases only one plant of each was included.

The whole collection was moved in showery weather early in November, under excellent conditions for the work. Twenty-one of the plants, chiefly hybrids, have been placed to form a group at the extreme west end of the south bank of Rhododendron Glen, close to the look-out, where, especially during May and June, they will provide a constant succession of yellow, white, pink, rose, peach and apricot-colored flowers and together will form an exciting and lovely new scene in the spring and summer pageant in the Glen.

Most of the species have been planted with their near relatives in their assigned locations, i.e., *Augustini*, *croceum*, *exquisitum*, *Thomsonii*, and others, and consequently are scat-

tered all around this area. Many of the plants are well budded so that, with favorable weather next spring, we can look forward to seeing them in bloom; a few lack names and will have to await identification at that time or later, but their quality is already evident. For such a magnificent gift the Arboretum

is greatly indebted to the generosity of Mrs. McMahon—and not only the Arboretum, but also the citizens of Seattle and other visitors who in many future years can come and see these lovely shrubs in all their beauty, increasing annually in size and splendor. B. O. M.

Maples Cultivated in Arboretum

SPECIES	Received as:†	Date Planted	Size	Notes
<i>argutum</i>	P	2/46	9½' x 2½'	
<i>Buergerianum ningpoense</i>	S	2/53	8' x 3'	
<i>campestre</i>	?	?	20' x 10'	Older trees
** <i>capillipes</i>	S	4/51	14'	
<i>cappadocicum rubrum</i>	P	4/53	9'	
<i>carpinifolium</i>	P	?	5' x 4'	Poor condition
<i>circumlobatum</i>	P	4/47	8' x 5'	<i>A. japonicum</i> var.?
<i>cissifolium</i>	S	4/53	7' x 3'	
<i>crataegifolium</i>	P	?	8' x 3½'	Poor condition
** <i>Davidi</i>	S	12/49	14' x 5'	
<i>diabolicum</i>	P	?	7½' x 4'	Growing in thick brush
<i>Ginnala</i>	S	1/53	4½' x 2'	
** <i>Grosseri</i> (?)	S	12/51	12' x 6'	Forrest 21337
<i>Hersii</i>	S	4/53	6½' x 2'	
<i>leucoderme</i>	P	3/52	5½' x 3½'	
<i>micranthum</i>	P	4/48	8' x 6½'	
<i>nikoense</i>	P	4/48	17' x 6'	
<i>oblongum</i>	S	6/51	5' x 3'	Burned by winter 1953-54
<i>Oliverianum</i>	S	12/52	7½' x 3'	
<i>palmatum</i>	P	4/48		
50 Japanese varieties or forms in Woodland Garden or west of Boulevard				
<i>pensylvanicum</i>	P	4/53	5½' x 2'	
<i>pictum</i>	P	?	8' x 6'	Very poor
<i>platanoides</i>	P	4/48	12' x 4'	
<i>ascendens</i>	P	2/51	9' x 4'	
"Crimson King"	P	4/51	10' x 3'	
<i>Schwedleri</i>	P	4/51	20' x 7'	
<i>rubrum</i>	?	12/53	8' x 4'	
<i>columnare</i>	P	3/52	8' x 2'	
** <i>rufinerve</i>	S	12/50	13' x 5'	
<i>saccharinum</i>	P	4/48	20' x 8'	
<i>saccharum</i>	P	12/52	10' x 3½'	
<i>nigrum</i>	P	4/50		
"Sentry"	P	2/51	8' x 4'	
<i>Sieboldianum</i>	P	4/48		
<i>tegmentosum</i>	Scions	3/52	6' x 3'	
<i>tetramerum</i>	S	4/49	9' x 3'	
<i>Tschonoskii</i>	P	?	8' x 5'	

† Received as plants, P, or seeds, S

ADDITIONAL MAPLE SPECIES IN LATH HOUSE OR NURSERY

<i>Acer barbinerve</i>	<i>A. ibericum</i>	<i>A. triflorum</i>
<i>A. erianthum</i>	<i>A. Miyabei</i>	<i>A. sp. K. W. 9511 (Campbellii?)</i>
<i>A. glabrum</i> var. <i>Douglasii</i>	<i>A. ornatum</i> var. <i>Matsumurae</i>	<i>A. sp. K. Y. 109 (ex Formosa)</i>
<i>A. griseum</i>	<i>A. spicatum</i>	

The principal maple area is west of Lake Washington Boulevard, between Interlaken and the Madison Street playfield. A younger group was planted in spring of 1953 to the west of the magnolia collection, while four species marked ** will be found in the borders opposite the Winter Garden.

Richard Emil Layritz

1867-1954

IN 1889 a young Mr. Layritz planted a Sequoia seed in what was later to become Victoria's first and finest nursery. Sixty-five years later his ashes were planted at the foot of this noble tree. The intervening years were filled with interest and happiness. The happiness that comes from growing and propagating trees and shrubs, the interest that comes from finding and importing new plants.

It would be difficult to estimate how much the gardeners of the Pacific Northwest owe to this great horticulturist. Surely no one did more than he to make our gardens more beautiful. He was always on the lookout for new plants, growing them well and assessing critically before recommending his finds. His was the enquiring mind, not always satisfied with catalogue descriptions; he made numerous trips to Europe to see for himself and as a result found many new things and made friends with the great and near great in Horticulture.

At home Mr. Layritz was the first man out in the morning and the last man to quit in the evening. The dark part of the evenings he spent making tags for digging or cuttings for planting the next day. With weather-beaten and gnarled but unbelievably nimble hands, he could bud roses so fast that it took two good men to tie up after him.

Mr. Layritz was born in Dresden, Germany, and from the first knew that horticulture was his life's work. While young Richard was in grade school, his father, a keen gardener, realized that his youngest son had inherited his love of plants, and arranged further study for his son in a horticultural school in Stuttgart. After that followed his years of apprenticeship in Spath's Nursery, at that time one of the largest in Europe. Mr. Layritz often said that while he acquired a good grounding in horticulture at Spath's he also learned the value of hard work.

While working in England he heard, through C. P. R. propaganda, glowing tales about Canada. Arriving in Victoria with a small amount of money, he realized that all they said was true, but the cash did not hold out. He joined the Yukon gold rush, not as a prospector but rather as a paid helper—the nursery needed sure cash.

The break he was looking for came when the interior of British Columbia became orchard-minded. Fruit tree orders went out by the freight carload. He established an extra nursery in Kelowna and sold hundreds of thousands of fruit trees. When this phase finished there were demands for ornamental trees and shrubs.

Before the last war Layritz Nurseries had extensive markets in the Far East. British residents in Hong Kong, remembering the roses in England, were prime customers, especially so as roses had to be replaced often in that humid climate.

More recently his thoughts and interest turned to rhododendrons; he was able to make an extensive collection, and the gardeners of Washington and Oregon were among his best customers.

His was the full life. His brusque manner covered up the kindest heart I have ever known. Not even his own wife, Dorothy, all kindness herself, knew the full extent of his charities.

Richard Layritz was small of stature, not very high, not very wide, but he left a tremendously big pair of shoes to fill. His many friends all over the world will be comforted to know that the swaying evergreen branches of his pet Sequoia tree lean protectively over his ashes. His kind may never come this way again.

AGNES CHRISTIANSEN

ARBORETUM NOTEBOOK

This department is published for correspondence and pertinent comments by experienced growers on interesting plants and their culture. We solicit your questions but space limitation necessitates the publishing of only such answers as we deem of general interest.

GARDEN HINTS . . .

DECEMBER

Robert Fortune brought the Winter-Flowering Jasmine from China in 1845 and it has become one of our most valued shrubs. When full of bloom in December it makes a sunny spot in a dull corner and a bowl of blooms brightens any room. When the branches are freely cut for arrangements spring pruning is eliminated and the bush is stimulated to put forth buds for next year. It grows easily from cuttings.

Viburnum fragrans is another fine, winter-blooming shrub from China. Mr. Reginald Farrer brought it to England some forty years ago. It has a most sophisticated appearance. The dark green leaves are deeply veined. Until the end of the last Chinese dynasty it was only allowed to be planted in the gardens of imperial palaces and in the temple gardens. In my garden it began blooming in late October and in mild winters its charming, fragrant blossoms continue until February or March.

When cutting branches of holly berries for Christmas, keep in mind the appearance of the tree. This may be a form of trimming which eliminates spring pruning.

JANUARY

Snowdrops follow the calendar pretty exactly, but in cold weather the buds remain closed in an upright position until a sunny day, when suddenly they open their bells and droop them. *Galanthus nivalis* likes a fairly damp situation under deciduous shrubs or trees. *Galanthus Elwesii* does best in an open spot that dries out in summer. There is a variety of *G. nivalis* seldom seen, with greenish flowers—more or less of a “museum piece.” It has green spots on some of the petals and is called *Scharlokii*. All snowdrops should be divided immediately after flowering if division is necessary. Otherwise they will spread and in time make a fine spring showing.

Gray-colored plants add much to the winter garden, helping to remove what may be a somber aspect. *Euonymus radicans* “Silver King” makes a low shrub with silver leaves edged with pink. *E. radicans colorata* has fine reddish-purple-colored leaves while *E. radicans minima* has small, green leaves making an excellent ground cover. *Santolina Chamaecyparissus* (Lavender-cotton) always looks spring-like. *Phlomis fruticosa* (Jerusalem Sage) has interesting gray-green leaves and unusual yellow flowers in summer. Making a winter walk of various colored evergreens in a fairly large garden would be a fascinating project and our own Oregon Grape with its beautiful, wine-colored winter coloring should be featured.

FEBRUARY

Pussy Willows and crocuses are the outstanding blossoms in February but I always look for hazel tassels also. A hazel bush in spring with its drooping tassels and touches of red pistillate flowers is one of the delights of an early season.

The crown imperials (*Fritillaria imperialis*) come along, if the weather is warm, in February. No flower is more stunning and distinctive in the early garden. It is a little particular about situation and must be marked carefully as it usually disappears in summer and may be disturbed by a careless gardener. All fritillarias resent disturbances of any kind. Our native *F. pudica* did fairly well in my spring garden but prefers, I have heard, a fairly limy soil which I did not have in my woodland.

Many varieties of dwarf iris appear now; *I. reticulata* and its newer hybrids, *I. Danfordiae* and *I. stenophylla*, all about six inches high. Most of these early irises like a well-drained, sunny spot. Their bulbs should be lifted and well ripened in the sun after the foliage has shriveled.

Question:

Can you furnish me with information concerning our state flower?

Answer:

The native rhododendron of the Pacific coastal region and the state flower of Washington is *Rhododendron macrophyllum*, less correctly called *R. californicum*.

It grows wild from western British Columbia as far south as the Santa Cruz mountains near Monterey, California, usually not far from the ocean or Puget Sound, and seems to prefer shady places.

Apparently the first white man to find it was Archibald Menzies, surgeon and naturalist on Captain Vancouver's expedition to the Pacific Coast of America in 1792, who noticed it on May 4 of that year at Port Discovery, Washington. It was described botanically by George Don in 1834 as *R. macrophyllum*, which is the earliest and therefore the correct name.

The flowers are pink and open here about the second week of May, lasting two to three weeks, depending upon the weather. The seeds ripen very early in mid-August. It cannot be considered reliably hardy in Washington east of the Cascade Mountains.

Combinations

Dwarf iris under forsythia.

Erica carnea or wine-colored "Lenten Roses" (*Helleborus orientalis*) under *Cercis*, the Judas Tree. The blossoms of the *Cercis* repeat the color of the flowers under it. The rosy-magenta, pea-shaped flowers grow along the bare branches before the leaves appear.

For a gorgeous, barbaric, delightful combination in full sun try red and purple single asters with a ground cover of yellow nasturtiums. This should be a fairly large mass to be most effective.

Important shrubs in flower to be seen in the Arboretum during the winter months:

Viburnum fragrans, *Hamamelis mollis*, *Erica carnea* forms, and the Winter Sweet (*Chimonanthus*).

✓ ✓ ✓

A wise gardener keeps her pruning shears under lock and key.

List of Plant Names

(Continued from Fall, 1954)

Oliveranthus	for G. W. Oliver
olympicus	of Olympus
ombrochares	lover of rain
omnivorus	of all kinds of food
Omphalodes	Gr., navel-shaped
Oncidium	Gr., a tubercle
Oncoba	Arabian name
ophioglossifolius	ophioglossum-leaved
Ophioglossum	Gr., serpent's tongue
ophioglossoides	Ophioglossum-like
Ophrys	Gr., eyebrow
oppositiflorus	opposite-flowered
oppositifolius	opposite-leaved
opulifolius	opulus-leaved
Opuntia	old Latin name
orbicularis	orbicular, circular-leaved
orchideus	orchid-like
orchidiflorus	orchid-flowered
orchioides	orchid-like
Orchis	Greek word
oreganus	of Oregon
oreodoxa	glory of the mountains
oreophilus	mountain-loving
oreotrephes	mountain-bred
orgyalis	length of arms extended, about six feet
orientalis	oriental, eastern
organifolius	origanum-leaved
organoides	origanum-like
Origanum	ancient Gr. name, meaning "delight of mountains"
Orixa	Japanese name
Ormosia	Gr., necklace
ornans	ornamented
ornatissimus	very showy
ornatus	ornate, adorned
ornithocephalus	like a bird's head
Ornithogalum	Gr., bird and milk
ornithopodus	like a bird's foot
ornithorhynchus	like a bird's beak
oroboides	orobus-like
Orontium	one of the many names chosen arbitrarily by Linnaeus
orthobotrys	straight-clustered
Orthocarpus	Gr., straight fruit
orthochilus	straight-lipped
orthopterus	straight-winged
orthosepalus	straight-sepaled
Osmaronia	derivation doubtful
Osmorhiza	Gr., referring to sweet, edible roots
Osmunda	from Osmunder, a Saxon God
Osteomeles	Gr., stone fruit
Ostrowskia	for Ostrowsky, Russian scientist
Ostrya	ancient name
Othonna	ancient Gr. name
oulotrichum	with curly hairs
Ourisia	for Gov. Ouris of the Falkland Islands
ovalifolius	oval-leaved
ovalis	oval
ovatifolius	ovate-leaved
ovatosepalum	with ovate sepals
ovatus	ovate, elliptic
ovifera	egg-bearing
ovinus	pertaining to sheep
Oxalis	Gr., sharp, referring to taste
oxyacanthus	sharp-spined

Oxydendrum	Gr., sour tree	Parmentiera	for A. Parmentier,
<i>oxygonus</i>	sharp or acute angled		French writer
Oxylobium	Gr., sharp pod	<i>parmularum</i>	small shield
Oxypetalum	Gr., sharp petal	Parnassia	after Mt. Parnassus, in Greece
<i>oxyphyllus</i>	sharp-leaved	<i>parnassifolius</i>	parnassia-leaved
<i>oxysepalus</i>	sharp-sepaled	Parochetus	Gr. beside, and ditch
Oxytropis	sharp-keel	Parrotia	for F. W. Parrot,
			German traveler
<i>pabularius</i>	pasturage	Parthenium	ancient Greek name
Pachistima	Gr. pachys, thick, stigma	Parthenocissus	Gr. virgin, and ivy
<i>pachyanthus</i>	thick-flowered	<i>partitus</i>	parted
<i>pachycarpus</i>	with thick pericarp	<i>parviflorus</i>	small-flowered
Pachycereus	Gr. thick and cereus	<i>parvifolius</i>	small-leaved
<i>pachyneurus</i>	thick-nerved	<i>parvulus</i>	very small
<i>pachyphloeus</i>	thick-barked	<i>parvus</i>	small
<i>pachyphyllus</i>	thick-leaved	Paspalum	Gr. ancient name for millet
Pachyphytum	Gr. thick plant	Passiflora	passion flower
<i>pachypodium</i>	thick-footed	Pastinaca	Lat. pastus, food
<i>pachypterus</i>	thick-winged	<i>patagonicus</i>	of Patagonia
Pachyrrhizus	Gr. thick and root	<i>patavinus</i>	of Padua
Pachysandra	Gr. thick stamens	<i>patellaris</i>	circular, disk-shaped
<i>pachytrichum</i>	with thick hair	<i>patens</i>	open, spreading
Paeonia	for a mythical physician, Paeon	<i>patulus</i>	spreading
		<i>pauciflorus</i>	few flowered
<i>pagophilum</i>	peak-lover	<i>paucifolius</i>	few leaved
<i>paleaceus</i>	chaffy	Paullinia	for Simon Paulli
Paliurus	ancient Greek name	<i>pauperculus</i>	poor
<i>pallescent</i>	becoming paler	Paulownia	for Anna Paulowna,
<i>pallens</i>	pale		princess of The Netherlands
<i>palliatum</i>	cloaked	Pavonia	for Don J. Pavon,
<i>pallidiflorus</i>	pale-flowered		Spanish traveler
<i>pallidifolius</i>	pale-leaved	<i>pavoninus</i>	peacock-like
<i>pallidus</i>	pale	<i>pectantum</i>	toothed like a comb
<i>palmatifidus</i>	palmately cut	<i>pectinifera</i>	comb-bearing
<i>palmatus</i>	palm-leaved	<i>pectralis</i>	shaped like a breast bone
Palmerella	for Dr. Edward Palmer, collector	<i>pedatifidus</i>	pedately cut
		<i>pedatus</i>	footed, bird-footed
<i>paludosus,</i>	marsh-loving	<i>pedemontanus</i>	of Piedmont, Italy
<i>palustris</i>	old Gr. name meaning	Pedicularius	Latin for louse
Panax	all-healing	Pedilanthus	Greek shoe-flower
		<i>peduncularis</i>	peduncled, stalked
Pancratium	Gr. all-powerful	<i>pedunculosus</i>	with many peduncles
Pandanus	Latinized form of a Malayan name	Pelargonium	Greek, stork
		Pelecypora	Greek, hatchet-bearing
Pandora	for Pandora, Gr. mythological name	Pellaea	Greek, pellos, dusky
		Pellionia	for J. Alphonse Pellion
<i>panduratus</i>	fiddle-shaped	<i>pellucidus</i>	with transparent dots
<i>paniculatus</i>	paniculate	Peltandra	Gr. referring to peltate anthers
Panicum	old Latin name of Italian millet		Gr. shield
		Peltaria	
<i>pankimense</i>	from Pankim La, in Tibet	<i>peltatus</i>	peltate, shield-shaped
<i>pannonicus</i>	of Pannonis, Hungary	<i>peltifolius</i>	peltate-leaved
<i>pannosus</i>	rugged	<i>pelviformis</i>	pelvis-shaped
Papaver	old Latin name	<i>penduliflorus</i>	pendulous-flowered
<i>papaveraceus</i>	poppy-like	<i>pendulinus</i>	pendulous, hanging
Paphiopedilum	from Paphos, and Lat. sandal	<i>penicillatus</i>	hair-penciled
<i>papillatum</i>	covered with nipples	<i>peninsularis</i>	peninsular
<i>papilionaceus</i>	butterfly-like	Peniocereus	Lat., thread and Cereus
<i>papillosus</i>	with papillae or protuberances	<i>pennatus</i>	feathered, pennate
<i>papyraceus</i>	papery	<i>pennigera</i>	bearing feathers
<i>papyrifera</i>	paper-bearing	<i>penninervis</i>	feather-veined
Paradisea	named for Count Paradisi of Modena	Pennisetum	Lat., penna, feather; seta, bristle
			pinnately-veined
<i>paradisiacus</i>	of parks or gardens	<i>pennivenium</i>	of Pennsylvania
<i>paradoxum</i>	unexpected	<i>pennsylvanicus</i>	pensile, hanging
<i>paradoxus</i>	paradoxical, strange	<i>pensilis</i>	Gr. five stamens
<i>parasiticus</i>	of a parasite, parasitic	Penstemon	five-toothed
<i>pardalinus</i>	leopard-spotted	<i>pentadenius</i>	five-angles
Parietaria	from parietarius, belonging to walls	<i>pentagonus</i>	with five pistils
		<i>pentagynus</i>	with five stamens
Paris	from par, equal (parts of plant)	<i>pentandrus</i>	five-winged or five-tufted
		<i>pentalophus</i>	five-flowered
Parishii	for Rev. C. S. P. Parish	<i>pentanthus</i>	
Parkinsonia	for John Parkinson		(To Be Continued)

BOOK REVIEWS

Vocabularium Botanicum. E. F. Steinmetz. 2nd ed. (1954). Printed in Holland. \$7.90.

AN interesting book has recently come to the Arboretum called *Vocabularium Botanicum*, by E. F. Steinmetz. The preface states that it is a "Nomenclature in six languages (Latin, Greek, Dutch, German, English and French) of the principal scientific words used in botany." It is just that: a glossary which contains specific names as well as many words used in descriptions of all parts of plants. The 350 pages are divided into six columns—the Latin name in the first, the Greek derivation (when it occurs) in the second column. The next four columns are divided into Dutch, German, English and French names. The generally accepted pronunciation of the Latin and Greek names is indicated. The masculine form of the words is predominantly used in the lists but in a short foreword there is an explanation in the four modern languages of the internationally adopted system of forming the feminine and neuter forms. The lists are necessarily not complete because of the limited space, but the book undoubtedly will serve many botanists with information difficult to find otherwise. It would be of exceptional value to gardening tourists when visiting Holland, Germany and France. The book in itself is an unique contribution to any botanical library.

GRACE T. DOWLING

✓ ✓ ✓

The Arnold Arboretum Garden Book, by Donald Wyman. Published by D. Van Nostrand Co., Inc., New York (1954). Price \$5.95.

THIS PUBLICATION, in book form, of more than forty collected bulletins of *Arnoldia* will, I am sure, be welcomed by many who are interested in the pursuit of gardening and especially those, both amateurs and professionals, who have an interest in the growing of woody plants.

The introductory chapter tells us, most interestingly, of the history of the Arnold Arboretum, since its foundation in 1872 up to the present time, and of its work and objectives; also of some of the great men who have helped to make this world-famous Arboretum what it is today.

Dr. Donald Wyman, the present horticulturist of the Arnold Arboretum, who has written most

of the bulletins, has an interesting and easy style for all to understand.

Separate chapters are devoted to Vines, Ground Covers, Azaleas and Rhododendrons, and Trees, in which the up-to-date history of the now well-known *Metasequoia glyptostroboides* is told. Propagation, plant breeding and the pruning of ornamental shrubs and trees are also covered by other issues of *Arnoldia*. A chapter on fruit bearing trees and shrubs of special food value to birds will appeal particularly to bird lovers. The last, but not least, chapter gives much information on mulches, and the ever-present and expensive question of labels.

At intervals throughout the book are many varied lists and selections of trees and shrubs which the reader will find most useful to help him with his problems.

There are some 350 pages of good art paper and the printing is clear and easy to read. The book is profusely illustrated with many excellent black and white photographs and four-color plates.

For the wealth of information that this book contains, the sum of \$5.95 is a very small price to pay and it is a book which, if on your shelf, will constantly be removed for reference.

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Maples for Park and Garden Use as They Grow in the Arnold Arboretum

(Continued from Page 115)

color and the red maple a red color, very early in the season. It should also be mentioned that the Amur maple (*A. Ginnala*) has bright red fruits that frequently color in the early fall before the leaves change to red, and the unique, long, pendulous clusters of fruits on the Sycamore maple (*A. Pseudo-Platanus*) are frequently very interesting.

It has not been possible to mention all the 120 maples that are proving hardy in the Arnold Arboretum. Some, like *A. platanoides Stollii* and *A. platanoides laciniatum* (the Eagle Claw maple) are really freaks which have no merit in any ornamental planting. Others are very similar to some of the recommended types, and until they show some unusual characteristic that may make them worthwhile in this part of the country they might best be overlooked for the time being.

Also, it should be emphasized that the maples mentioned here are not the only good ornamental maples grown in America today. There are many varieties of *Acer palmatum* that are being used in slightly warmer parts of the country with excellent results, and other species are native to other parts of the country. The ones here mentioned seem to be proving themselves among the best in our collection.

Even among the 50 species and varieties mentioned there are some that should be used with caution. The box elder (*A. Negundo*), the silver maple (*A. saccharinum*) and their varieties are all weak-wooded and among the first trees to split and crack in wind, snow and ice storms.

Most are comparatively free (here at least) from serious insect pests and diseases although the sugar maple is susceptible to rust diseases after unusually wet springs. We find it necessary to spray our maples only once each year for cankerworms, done when the lilacs come into full bloom. All in all, there is many a fine shade tree for park or home grounds in this excellent group.

Arboretum Maps

In Color

13" x 24"

Showing principal plant groups,
trails, parking areas, etc.

50c each

ARBORETUM FOUNDATION

Seattle 5, Washington

HARDY ENGLISH FERNS

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Many Little-Known Maples Ready for Extensive Use

(Continued from Page 118)

a more or less ragged appearance to the planting when it begins to assume a useful size. The "Irish" maple is a large, round-headed tree with a fine branch structure—the branches all sweep out and upwards to form a fine head. The foliage is smaller than normal, but dense. The third selection, called the "Almira", is a low, dwarfish, table-top type that can be compared somewhat with the globe form. The "Almira" is looser and more informal than the globe and, on the basis of the growth made by the parent form in 25 years, it probably would not exceed a height of over 18 feet, with a similar spread, in 50 years. These selections are now in commercial production and are all good growers. They should greatly enhance the use of the Norway as a fine street tree.

The red maple (*A. rubrum*) is a good street tree—never gets too large, and in the fall, away from areas of atmospheric pollution, its flaming red and sometimes yellow color makes it one of the spectacular street and roadside trees. It was felt, however, that improvement of the species was necessary and that various functional forms could be used for the many restricted sites encountered in fitting trees to city streets. The first form we found was a beautiful pyramidal one that was called the "Bowhall". This tree has a strong branching habit, larger than normal foliage, and a fall color proclivity that to date has been transmitted to its progeny. Whether this very desirable quality will persist under widespread dissemination and use will not be known for several years, but it looks promising. This pyramidal form is considered by the writer as one of the most practical for street use because it eliminates the high, heavy, overburden of top that is characteristic of so many big trees and which causes so much trouble in snow, ice and wind storms. A second selection is a very narrow fastigate form called "Newton Armstrong," named for a prominent arborist who first found it in the

wild and brought it to the attention of the writer. Its narrow form should make it an obvious replacement for the popular but disease-ridden Lombardy poplar.

The last red maple selection is a splendid globe form named "Paul E. Tilford". Dr. Tilford is the executive secretary of the National Arborist Association. This form is an ideal one for use in conjunction with overhead power lines. Its use is based on the philosophy that if we must prune off the tops of trees under wires and make artificial globes of them, why not plant a natural globe and eliminate this costly operation.

All in all, the new and seldom-used maples mentioned here are ready for use. They should be used in place of the splintery weed trees that have littered up our streets for the past half century to the disgust, expense and consternation of the public and public officials. Trees on streets should and can serve their community with distinction. Trees are noble creations when used properly and in the right place, and these new maples deserve widespread use.

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Winter Color

(Continued from Page 101)

Bergenia (Megasea)—*Erica carnea*—*Sedum spathulifolium rubrum*.

Cotoneaster salicifolia — red- and yellow-stemmed willows.

Viburnum Tinus—*Helleborus niger* and *H. orientalis* hybrids.

Prunus subhirtella autumnalis—*Erica carnea*—*Iris stylosa*.

Rhododendron mucronulatum—pink hepatica—Juliae primroses and saxifrage.

Jasminum nudiflorum—winter aconite.

Elaeagnus pungens maculata—*Cornus mas*—*Narcissus Bulbocodium*.

Although spring doesn't begin officially until March 21, it is hard to say with assurance exactly when winter and early spring flowers will bloom, or even the sequence of bloom. A warm week in February may bring out flowers that weren't expected until April. Winter flowers may be a month late because of a cold spell in January. We are accustomed in this favored land to find blossoms of sweet violet, primulas in variety, *Camellia japonica*, and many others any time from November on so these may also be considered an almost integral part of winter.

The following list of plants that can give interest and color during the drear months is by no means exhaustive, as anyone who has observed the Winter Garden at the Arboretum well knows. It just includes some of those which are more familiar and available.

Pink—*Bergenia ligulata*, *Daphne Mezereum*, *D. odora*, *Helleborus niger*, *H. orientalis*, *Pernettya mucronata*, *Prunus subhirtella autumnalis*, *Rhododendron acuminatum*, *Rhododendron mucronulatum*, *Symphoricarpos oriculatus*, *Viburnum fragrans*, *Viburnum Tinus*.

Yellow—*Aucuba japonica variegata*, *Chimonanthus fragrans*, *Cornus mas*, *Elaeagnus pungens maculata*, *Hamamelis japonica*, *H. mollis*, *Jasminum nudiflorum*.

White—*Daphne Mezereum alba*, *D. odora alba*, Heather, *Pieris* species, *Rhododendron leucaspis*, *Salix discolor*, *Sarcococca* species.

Green—*Garrya elliptica*, *G. Fremontii*, Filbert, *Helleborus*.

It is fortunate that there are so many low plants to clothe and color the ground itself in winter. Few shrubs and trees grow naturally out of barren earth. A colony of several sorts of these delightful small bulbs and plants would be sufficient by themselves to carry a garden happily through the winter.

<i>Anemone apennina</i>	March	
<i>Chionodoxa</i> species	February	blue, pink
<i>Crocus</i> species	February	lavender, yellow, white
<i>Cyclamen coum</i>	January, February	deep pink
— — <i>hiemale</i>	January, February	deep pink
— — <i>ibericum</i>	February	pale pink
<i>Eranthis hyemalis</i>	January, February	yellow
<i>Galanthus</i> species	January, February	white
<i>Hepatica triloba</i>	February	blue with variations
<i>Iris reticulata</i>	January, February, March	rich purple
— — <i>stylosa</i> (<i>I. unguicularis</i>)		blue or white
<i>Leucojum vernum</i>	February, March	white
<i>Muscari</i> species	March	blue, white
<i>Narcissus Bulbocodium</i>	March	yellow
<i>Omphalodes verna</i>	March	blue
<i>Primula denticulata</i>	February	lilac, white
— — <i>Juliae</i>		
— — x <i>Juliana</i>		
— — <i>Polyanthus</i>	January	
<i>Saxifraga</i> species	March	pink, rose; red
<i>Scilla sibirica</i>	February	electric blue
<i>Synthyris</i> species	March	soft blue
<i>Tulipa Kaufmanniana</i>	March	cream, rose
<i>Viola odorata</i>	February	lavender, purple

Those Perplexing Photinias

(Continued from Page 100)

separated from the parent plant, but do not lift them until the next spring. Take cuttings in July-August if you are using bottom heat, and not until October-November if they are to be put into a cold frame. Take them with a heel and insert in 2 parts peatmoss to 1 part loam and 1 part sand.

Seeds should be collected as soon as ripe and stratified (mixed with sand and stored in a container out of doors) over the winter, then sown in flats or pots in February or March. Many people feel that photinias are difficult to transplant so it would probably be well to grow them on in pots. They start their new growth earlier than many broad-leaved evergreens and should be transplanted before the 15th of March.

Here endeth our first lesson on those bewitching, perplexing photinias.

Part II in Spring 1955 Issue

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INDEX TO VOLUME XVII (1954)

- Abelia floribunda*, 58
Abies amabilis, 83
— *concolor*, 83
— *Fraseri*, 83
— *lasiocarpa*, 82, 83, 103
Abutilon vitifolium, 58
Acaena, 24
— *glauca*, 24
— *microphylla*, 24
Acer argutum, 105, 107
— *Buergerianum*, 110, 118
— *campestre*, 117, 119
— *capillipes*, 117
— *carpinifolium*, 105, 107, 117
— *circinatum*, 115, 117, 119
— *cissifolium*, 105, 110
— *crataegifolium*, 105
— *dasycarpum*, 119
— *Davidi*, 117
— *diabolicum*, 105
— *distylum*, 105, 106
— *Ginnala*, 105, 106, 118, 130
— *griseum*, 86, 113, 118
— *japonicum*, 105
— — *aureum*, 46
— *macrophyllum*, 41, 112, 116, 119
— *mandshuricum*, 113
— *micranthum*, 105, 107
— *Miyabei*, 105
— *Mono*, 105, 106
— *Negundo*, 110, 116, 119, 130
— — *variegatum*, 46
— *nikoense*, 105, 110, 113
— *nipponicum*, 105, 106
— *ornatum*, 110
— *palmatum*, 64, 105, 106, 119, 130
— — *amoenum*, 106
— — *Matsumurae*, 106
— *pensylvanicum*, 113, 119
— *platanoides*, 113, 115, 116, 118, 119
— — *laciniatum*, 130
— — *stolli*, 130
— — *"Almira"*, 131
— — *"Cleveland"*, 118
— — *"Irish"*, 131
— *Pseudo-Platanus*, 117, 119, 130
— — *erectum*, 117
— — *Spaethi*, 117
— — *Worleei*, 117
— *pycnanthum*, 105, 107
— *rubrum*, 115, 118, 119, 131
— — *"Newton Armstrong"*, 131
— — *"Bowhall"*, 131
— — *"Paul E. Tilford"*, 131
— *rufinerve*, 105, 107
— *saccharinum*, 116, 130
— *saccharum*, 116, 119
— *Shirasawanum*, 105, 106
— *Sieboldianum*, 105
— *tenuifolium*, 105
— *truncatum*, 117
— *Tschonoskii*, 105, 107
— *ukurunduense*, 105, 106
Ajuga reptans, 24
Ancestor of All Flowers, The, 97
Anemone nemorosa, 16, 58
— — *Allenii*, 58
— *Pulsatilla*, 23
Araucaria excelsa, 83
Arboretum, Ceanothus Species and
— *Hybrids in the, May 1954*, 65
— *Christmas Flowers in the*, 29
— *Donations to the*, 57
— *in Spring and Summer, 1954*, 69
— — *Equipment*, 71
— — *International Seed Exchange*, 71
— — *New or Unusual Plants*
— — *Flowering*, 70
— — *Public Relations*, 70
— — *Spring Planting*, 70
— — *Staff*, 89
— *Lilies in the*, 44
— *New or Unusual Plants in the*, 79
— *Notebook*, 30, 58, 90, 126
— *Seed Exchange, The*, 96
— *Spotlight*, 9, 47, 81, 104
— *Visitors*, 88
— *Winter Damage, 1953-54,*
— *Report on*, 80
Arbutus Andrachne, 32, 86
— *andrachnoides*, 86
— *hybrida*, 32
— *Unedo*, 29, 32, 86, 99
Arctostaphylos, 99
— *Andersonii pallida*, 29
— *nevadensis*, 31
— *patula*, 48
— *Stanfordiana*, 50
— *Uva-ursi*, 23, 60
Asarum canadense, 25
Atriplex Halimus, 46
Aubrieta, 23
Aucuba japonica, 87
— — *variegata*, 46
Azalea Schlippenbachii, 5

Ballard, Pat, 31, 82, 99
Bergenia, 29
Book Reviews
— *Arnold Arboretum Garden Book*, 129
— *Azaleas, The Glenn Dale*, 66
— *Lilacs for America*, 33
— *Lily Yearbook, 1954, The*, 66
— *Plants Indoors*, 67
— *Preliminary Holly Check List*, 33
— *Rhododendron & Camellia Yearbook,*
— *1954, The*, 34
— *Trees for Town & Country*, 66
— *Villa Taranto, The*, 94
— *Vocabularium Botanicum*, 129
Brandt, Lester, 12, 34
Brockman, C. Frank, 11, 41, 66, 103
Brydon, P. H., 14
Bunge, Sally, 67
Burma's Botanic Garden, Through
— *the Seasons in*, 37
Buzard, Helen, 7

Calluna vulgaris minima, 24
— — *"Mrs. Pat"*, 24
— — *"Mrs. Ronald Gray"*, 24
— — *nana*, 24
— — *pygmaea*, 24
Calochortus albus, 49
Cambridge, The University Botanic
— *Garden*, 1
Camellia "Auburn White", 7
— *"Bride's Bouquet"*, 7, 8
— *"C. M. Wilson"*, 8
— *"Daikagura"*, 8
— *"Debutante"*, 8
— *"Dessa Thompson"*, 8
— *"Drama Girl"*, 8
— *"Edwin Folk"*, 8
— *"Elegans"*, 8
— *"Finlandia"*, 7
— — *variegated*, 7
— *"Florence Daniell"*, 7
— *"Flowerwood"*, 8
— *"Frank Gibson"*, 8
— *"Frosty Morn"*, 7, 8
— *"Grace Burkhard"*, 8
— *"Herme"*, 8
— *"High Hat"*, 8
— *"Hikaru Genji"*, 8
— *japonica*, 132
— *"Jessie Katz"*, 8
— *"Joshua E. Youtz"*, 8
— *"Lady Clare"*, 8
— *"Lotus"*, 8
— *magnoliaeflora*, 8
— *"Marjorie Magnificent"*, 8
— *"Masquerade"*, 8
— *"Masterpiece"*, 8
— *Mathotiana*, 8
— *"Md. Calusante Pink"*, 8
— *"Melody Lane"*, 7, 8
— *"Monte Carlo"*, 7
— *nobilissima*, 29
— *"Pink Cloud"*, 8
— *"Pink Perfection"*, 8
— *"Red Finlandia"*, 7
— *reticulata*, 8
— *Sasanqua*, 29, 44
— — *oleifera*, 32
— *"Seventh Heaven"*, 7
— *"Shiro Chan"*, 8
— *"Spring Sonnet"*, 8
— *"Sunset Glory"*, 8
— *"Sweet Bon Air"*, 7
— *"Tinsie"*, 8
— *"White Daikagura"*, 8
Cassiope Mertensiana, 31
Ceanothus americanus, 50, 64
— — *"Gloire de Versailles"*, 64
— — *"Marie Simon"*, 64
— *austromontanus*, 49
— *cordulatus*, 48
— *cyaneus*, 64
— *divergens*, 50
— *diversifolius*, 50
— *foliosus*, 49, 50, 64
— *fresnensis*, 50
— *gloriosus*, 24
— *griseus horizontalis*, 50
— *impressus*, 50
— *integerrimus*, 49
— *Jepsoni*, 50
— *Lemmonii*, 49
— *papillosus*, 49, 50
— — *Roweanus*, 49
— *Parryi*, 49, 50
— *pinetorum*, 50
— *prostratus*, 49, 50
— — *occidentalis*, 49
— *pumilus*, 49
— *Roweanus*, 64
— *Species Hybrids in Arboretum*, 65
— *spinosus*, 64
— *The Hardier*, 48
— *thyrsiflorus*, 48
— — *repens*, 24, 50
— *velutinus*, 48
— — *laevigatus*, 48
Cedrus Deodara, 83
Ceiba pentandra, 38
Cercis, 126
Chamaecyparis Lawsoniana Allumii, 83
— *obtusa nana*, 83
Chimonanthus, 127
— *fragrans*, 101
Choisya ternata, 91
Christiansen, Agnes, 125
Christmas Flowers in the Arboretum, 29
Christmas Rose, 51
Christmas Tree with a Future, A, 82
Chimaphila maculata, 24
Chrysanthemum "Canary", 32
— *"Fred Shoemith"*, 32
— *"Golden Guinea"*, 32
— *"Holiday"*, 32
— *"Paramount"*, 32
— *"Royal Crimson"*, 32
Clarke, Catherine C., 23
Clematis Armandi, 91
— *florida var. bicolor*, 58
Clerodendrum, 44
— *trichotomum*, 81
Clanthus sp., 39
Colletia armata, 29
Coptis laciniata, 24
Cornus canadensis, 24
Corylus Avellana fuscobrunnea, 64
Cotoneaster humifusa, 23, 24
— *lactea*, 44
— *microphylla glacialis*, 24
Cotyledon oppositifolium, 23
Cox, E. H. M., 67, 89, 122
Crataegus arbutifolia, 100
— *glabra*, 100
— *serratifolia*, 100
— *villosa*, 100
Cryptomeria japonica, 85
— — *elegans*, 83
— — *nana*, 94
Cyclamen Atkinsii, 36
— *cilicium*, 36
— *coum*, 25
— *europaeum*, 25
— *neapolitanum*, 25
Cytisus Battandieri, 47

Daphne Cneorum, 58
Delonix regia, 38
Dendrobium chrysotoxum, 38
Deutzia scabra flore plena, 87
Dicentra cucullaria, 36
— *spectabilis*, 85
Douglasia laevigata, 24
Dowling, Grace T., 97, 129
Dryas Suendermannii, 23

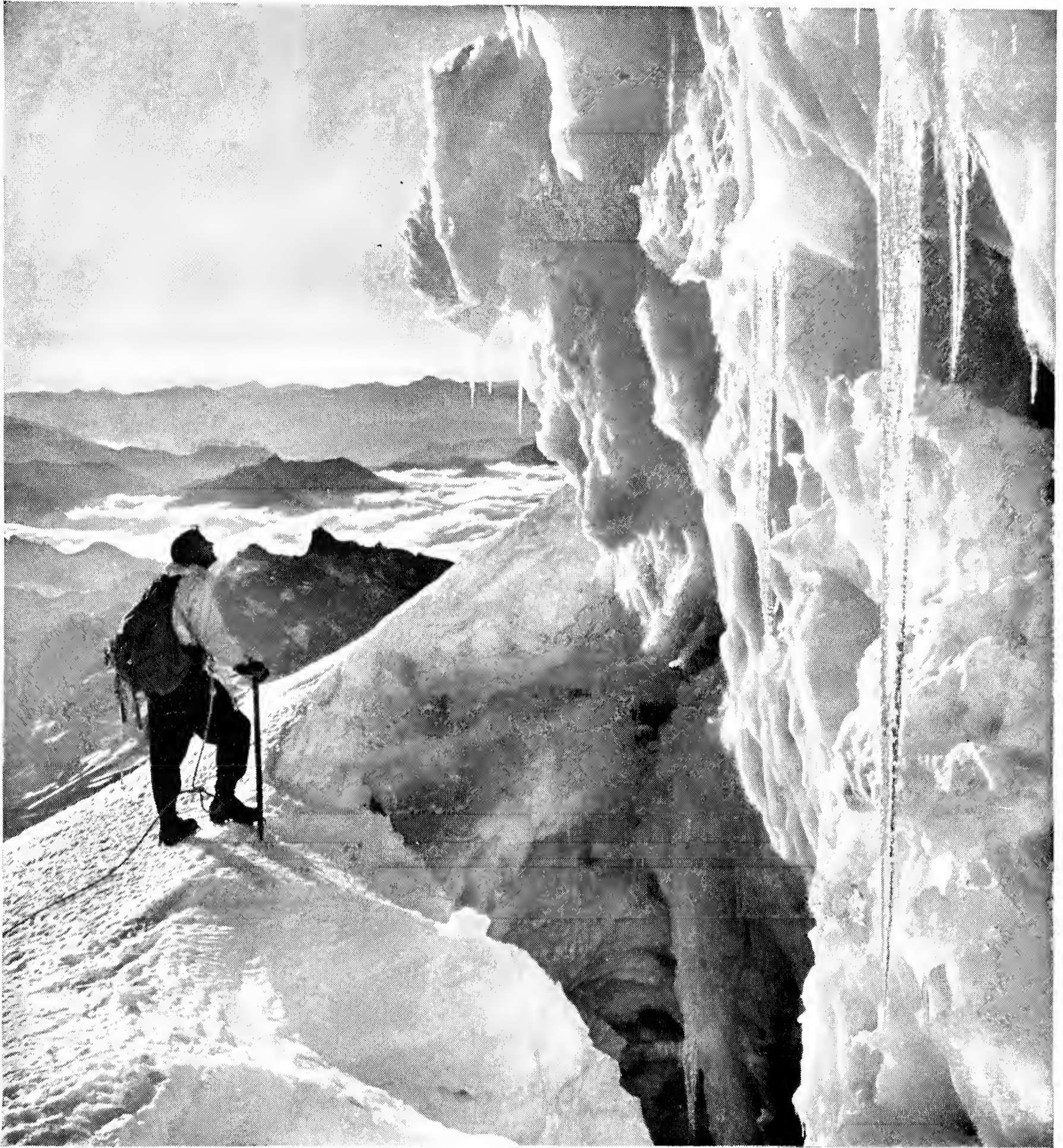
Echinops, 91
Elaeagnus augustifolia, 46
Elmore, Mary, 101
Embothrium longifolium, 86
Epigaea repens, 24, 31
Erica carnea, 24, 127
— — *"King George"*, 24, 29
— — *"Springwood Pink"*, 24
— — *"Vivellii"*, 24
— *darleyensis*, 29
— *lusitanica*, 29
— *vagans "Mrs. Maxwell"*, 24
— — *nana alba*, 24
Erythronium, 36
Escallonia, 46
Eugenia apiculata, 59
Eucalyptus aggregata, 75
— *cinerea*, 75
— *coccifera*, 74, 75

INDEX TO VOLUME XVII (1954)

- cordata, 75
- Dalrympleana, 75
- for Washington, Oregon, Vancouver, Seaboard Region, 72
- gigantea, 75
- Gunnii, 74, 75, 86
- Muellieri, 74
- niphophila, 74
- parvifolia, 74
- pauciflora, 75
- Perriniana, 75
- pulverulenta, 75
- subcrenulata, 74
- urnigera, 74
- vernicosa, 74
- whittinghamensis, 74
- Euonymus Fortunei colorata, 24
- Maackii, 46
- radicans colorata, 101, 126
- — minima, 126
- — "Silver King," 126
- Euphotinia, 100
- Exochorda macrantha, 91
- racemosa grandiflora, 91
- Fagus sylvatica Riversii, 46
- Ficus benghalensis, 38
- religiosa, 38
- Forsythia viridissima, 85
- Fortune, Robert, 84
- Fritillaria imperialis, 126
- pudica, 126
- Fuchsia "Abundance," 26
- "Amelia Aubin," 32
- "Black Prince," 26
- "Bloomer Girl," 32
- "Cascade," 32
- "Cavalier," 32
- "Galli Curci," 27, 32
- "G. Monk," 26, 27
- "Hollydale," 26
- "Inca Maiden," 27
- "Lens," 27
- "Little Beauty," 27
- "Lord Byron," 26
- "Marinka," 27, 32
- "Muriel," 27, 32
- "Tom Thumb," 27
- "Trailing Autumn," 27
- "Uncle Jules," 27
- "Violet Gem," 27
- "Virginia Bruce," 26
- "White Gold," 27
- "Winston Churchill," 26
- Fuchsias For All, 26
- Fulmer, W. F., 42
- Galanthus Elwesii, 126
- nivalis, 90, 126
- — Scharlokii, 126
- Galax aphylla, 24
- Garden Hints, March, April, May, 30
- June, July, August, 58
- September, October, November, 90
- December, January, February, 126
- Gardens, A Cruise to Six Famous, 86
- Gaultheria cuneata, 24
- Miqueliana, 24
- procumbens, 24
- Gentiana acaulis, 86
- Gilmour, J. S. L., 1
- Graham, Donald G., 94
- Ground Covers, Evergreen, 23
- Halesia carolina, 79
- Halimicistus Sahucii, 23
- Halimium ocymoides, 23
- Hamamelis mollis, 29, 127
- Hanley, Elizabeth, H., 54
- Hebe amabilis, 51
- — blanda, 51
- Armstrongii, 53
- "Autumn Glory," 52
- Buchanania, 53
- buxifolia, 52
- — odora, 52
- — prostrata, 52
- chathamica, 53
- coralloides, 53
- cupressoides, 51, 52
- elliptica, 53
- epacridea, 53
- formosa, 52
- Hectori, 52
- Hulkeana, 53
- Lavaudiana, 51, 53
- lycopodioides, 53
- macrocarpa, 51
- — latisepala, 51
- macroura, 51
- monticola, 52
- pinguifolia, 53
- propinqua, 52, 53
- salicifolia, 51
- — gigantea, 51
- — Kirkii, 51
- speciosa, 51, 52
- — rubra, 52
- — variegata, 52
- tetrasticha, 53
- Traversi, 52
- Helleborus orientalis, 127
- Hemlock, Western, 11
- Hepatica triloba, 36
- Heteromeles, 100
- arbutifolia, 100
- Heuchera glabella, 24
- sanguinea, 24
- Holodiscus, 48
- Hortus Cantabrigiensis, 1
- Hydrangea macrophylla, 90
- — "White Wave," 90
- Hypericum patulum, 90
- polyphyllum, 25
- reptans, 25
- "Rowallane Hybrid," 29
- Hutchinson, W. B., 16
- Ihrig, Herbert G., 76
- Ilex Aquifolium, 94
- cornuta, 85
- Iris Danfordiae, 126
- Hartwegii, 49
- reticulata, 126
- stenophylla, 126
- Ixora sp., 39
- Jasminum nudiflorum, 85
- Juniperus communis montana, 24
- horizontalis Douglasii, 24
- procumbens, 24
- Kalmia polifolia, 31
- Kennedy, F. G., 33
- Kinnikinnick, 23, 60
- Koepf, Roland, 119
- Lady of the Lilacs, 54
- Lagerstroemia flos-reginae, 39
- Larix Kaempferi, 87
- laricina, 103
- occidentalis, 103
- Layritz, Richard Emil, 125
- Ledum groenlandicum, 31
- Leonotis Leonurus, 29
- Leucothoe Keiskei, 25
- Ligustrum ovalifolium variegatum, 46
- Lilac "Ludwig Spaeth," 25
- "Madame Casimir Perier," 55
- "Mrs. Morgan Cooley," 55
- "My Favorite," 55
- "Ostrander Cooley," 55
- "President Grevy," 55
- "R. M. Mills," 55
- Lilacs, Lady of the, 54
- Lilies for Our Gardens, 42
- for Seattle Gardens, Recommended List, 43
- in the Arboretum, 44
- Lilium auratum, 43, 87
- — virginale, 45
- "Brandywine," 43
- candidum, 43, 45
- "Cavalier," 43
- centifolium, 42, 45
- "Dark Princess," 43
- Davidi "Oriole," 45
- formosanum Wilsonii, 63
- "Geo. C. Creelman," 42
- Humboldtii, 43, 45
- japonicum, 43
- leucanthum chloraster, 42
- Martagon, 45
- — Cattaniae, 45
- "Mega," 43
- "Mountaineer," 43
- regale, 42, 44
- Sargentiae, 42
- "Shasta," 43
- speciosum rubrum, 63
- sulphureum, 42
- superbum, 45
- Wardii, 45
- Linnaea borealis, 23, 25
- Linnaea, 50
- List of Plant Names, 60, 92, 127
- Lithospermum fruticosum, 25
- Lonicera fragrantissima, 85
- Lysimachia clethroides, 90
- Madison, Harry R., 20
- Magnolia Campbellii, 9
- conspicua, 9
- Dawsoniana, 9
- heptapeta, 9
- mollicomata, 9
- Sargentiana, 9
- Sprengeri diva, 9
- yulan, 9
- Maple, An Upright Oregon, 112
- Bigleaf, 41, 119
- — Oregon, 119
- Box Elder, 119
- Hedge or English Corkbark, 119
- Japanese, 119
- Norway, 113, 119
- Red, 120
- Seeds, Germination of, 121
- Silver, 119
- Striped or Moosebark, 119
- Sugar, 119
- Sycamore, 119
- Vine, 119
- Maples of Japan, 105
- for Park & Garden Use As They Grow in the Arnold Arboretum, 113
- for autumn color, 114
- — bark, 115
- — flowers and fruits, 130
- — foliage color, 113
- — habit, 114
- — shade, 113
- — size, 114
- Growing in the Arboretum, 124
- Japanese
- — Illustrations (fig. 16, 17), 108, 109
- — — Explanations, 111
- — Key to the Species, 110
- Ready for Extensive Use, Many Little Known, 116
- to be Found in Seattle Parks & Streets, Notes on, 119
- Marrett, N. D., 129
- Marten, E. F., Photos by, 5, 6, 9, 10, 40, 44, 47, 53, 72, 79, 81, 104
- Martin, D., 72
- Matsumura, Yoshiharu, 105
- McMahon Rhododendron Gift, The, 123
- Mespilus glabra, 100
- Michaud, L. J., 121
- Mitchella repens, 25
- Mulligan, B. O., 29, 33, 44, 69, 79, 112, 121, 124
- Photo by, 102
- Narcissus Bulbocodium conspicuus, 90
- minimus, 30
- triandrus albus, 90
- Nelson, Ben, 21
- Nepeta, 91
- New or Unusual Plants of the Arboretum, 79
- Notes & Comment, 28, 56, 88, 122
- Omphalodes linifolia, 30
- Osmanthus Delavayi, 59
- ilicifolius, 87
- Ostbo, E., 17
- Oxydendrum, 44
- Paeonia albiflora, 4, 5
- Pachistima Canbyi, 25
- Pachysandra terminalis, 25
- Pachystima myrsinites, 31
- Paeonia "Alice Harding," 36
- "Argosy," 36
- "Aurore," 36
- "Chromatella," 36
- Delavayi, 6
- "Flambeau," 36
- "L'Esperance," 36
- lutea, 6
- "Souvenir de Maxime Cornu," 36
- suffruticosa, 6
- "Surprise," 36
- Pandora's Jewel Box, 1954, A Peek Into, 7
- Papaver orientale "Helen Elizabeth," 59
- Parahebe Bidwillii, 68
- canescens, 68
- catarractae, 53
- Hookeriana, 68
- irrigans, 53

INDEX TO VOLUME XVII (1954)

- linifolia, 68
- Lyallii, 53
- Paulownia, 31
- Penstemon Cardwellii, 23
- Menziesii, 23
- pinifolius, 23
- Scouleri, 23
- Peonies, Tree, 4
- Peony, List of Moutan Varieties, 36
- Phlox subulata, 23
- Phlomis fruticosa, 123
- Photinia arbutifolia, 99, 100
- glabra, 100
- serrulata, 100
- villosa, 100
- Photinias, Those Perplexing, 99
- Photographs,
 - Acer macrophyllum, fig. 6, 40
 - Acer rubrum columnare, fig. 19, 115
 - Clerodendrum trichotomum, fig. 13, 81
 - Cytisus Battandieri, fig. 8, 47
 - Eucalyptus Perriniana, fig. 11, 72
 - Hebe salicifolia, fig. 9, 53
 - Hemlock Trees in Arboretum, fig. 5, 11
 - Japanese Tree Peony, fig. 2, 4
 - "Lady of the Lilacs—Mrs. Hulda Klager," fig. 10, 55
 - Lilium centifolium hybrids, fig. 7, 45
 - Magnolia denudata, fig. 4, 9
 - Oregon Maple—"Seattle Sentinel" in Winter, fig. 18, 112
 - Paeonia lutea, fig. 3, 6
 - Pyrenees Pine, fig. 1, 3
 - Sinojackia Rehderiana, fig. 12, 80
 - Viburnum fragrans, fig. 15, 104
 - Western Larch (Larix occidentalis), fig. 14, 102
- Phyllodoce empetriformis, 31
- Physocarpus opulifolius luteus, 46
- Picea Abies, 83
 - — Clanbrasiliiana, 83
 - — conica, 83
 - — glauca, 83
 - — densata, 83
 - — pungens, 83
 - — sitchensis, 83
- Pinus Mugo, 83
- Thunbergii, 83
- Plant Combinations, 59, 127
- Plant Names, List of, 60, 92, 127
- Platycodon grandiflorum, 58, 85
- Pourthiaea, 100
- Polygonum vacciniifolium, 25
- Primula japonica, 87
- Prune in March, 31
 - April, 31
 - May, 31
- Pruning Ornamental Shrubs, 22
- Prunus cerasifera Blireiana, 46
 - subhirtella autumnalis, 29
 - serrula, 86
 - triloba, 87
- Pyrola elliptica, 25
- Ranunculaceae, 97
- Rehderodendron macrocarpum, 80
- Rhododendron "Adrastia," 17
 - "Albatross," 16
 - "Anthony Waterer," 13
 - "Arthur Osborn," 12, 14
 - "Augfast," 12
 - Augustini, 12, 13, 15, 76
 - "Aurora," 15
 - — x Fortunei, 13
 - "Azor," 17
 - barbatum, 76
 - "Beacon," 17
 - "Berryrose" var. "Belvedere," 21
 - "Betty Wormald," 19
 - "Bluebird," 13, 18, 86
 - bullatum, 86
 - caeruleum, 76
 - callimorphum, 77
 - "Blue Diamond," 12, 13, 18
 - "Blue Tit," 12, 13, 15, 17, 18
 - "Bo-Peep," 14
 - "Bow Bells," 16, 18
 - "Britannia," 20
 - californicum, 127
 - campanulatum x Fortunei, 21
 - campylocarpum, 13
 - "Carex White," 16
 - "Carita," 12
 - — "Golden Dream," 13
 - "Carmen," 14
 - chasmanthum x Augustini, 15
 - ciliatum x moupinense, 13, 15
 - cilpinense, 13, 15, 17
 - cinnabarinum Roylei x "Royal Flush," 14, 15
 - "Corona" x Williamsianum, 18
 - "Corry Koster," 21
 - "Damozel," 13
 - "David," 20
 - "Day Dream," 13, 18
 - "Devonshire Cream," 13
 - "Diane," 15
 - dichroanthum x "Doncaster," 21
 - — x Elliottii, 20
 - didymum, 17
 - — x Griersonianum, 14
 - — x repens, 14
 - discolor x campylocarpum elatum, 14
 - — x "Fabia," 19
 - "Dormouse," 16
 - "Earl of Athlone," 20
 - "Electra," 15, 18
 - "Elizabeth," 18, 86
 - "Fabia," 12, 19, 86
 - — x "Arthur Osborn," 17
 - Fargesii, 16
 - Fortunei, 87
 - "George Hardy," 19
 - giganteum, 86
 - "Golden Horn," 20
 - Griersonianum, 13
 - — x discolor, 17
 - — x repens, 19
 - haematodes, 17
 - "Halcyone," 12
 - "Hon. Jean Marie de Montague," 20
 - "Hugh Koster," 20
 - — x neriiflorum, 20
 - "Idealist," 12
 - impeditum x Augustini, 13, 15, 17
 - intricatum x Augustini, 13
 - intrifast x Augustini, 13
 - "Jan Dekens," 21
 - (Kewense x Thomsonii) x Griffithianum, 15
 - "Lady Alice Fitzwilliam," 86
 - "Lady Bessborough," 12, 14, 18
 - — x Griersonianum, 13, 18
 - "Lady Chamberlain," 12, 15, 16
 - "Lady Roseberry," 12, 14
 - "Letty Edwards," 20
 - leucaspis, 77
 - Lindleyi, 86
 - "Loder's White," 16
 - lutescens x moupinense, 14
 - Macabeum, 86
 - macrophyllum, 127
 - Maddenii x cinnabarinum, 16
 - "Margaret Dunn," 19
 - "Marinus Koster," 19
 - "Mars" x Griersonianum, 20
 - "May Day," 12, 17
 - "Montreal," 12
 - "Moser's Maroon" x eriogynum, 20
 - "Mrs. Betty Robinson," 21
 - "Mrs. Lindsay Smith," 21
 - "Mrs. W. C. Slocock," 20
 - mucronulatum, 29
 - "Naomi," 12, 13
 - — x campylocarpum, 13
 - — "Exbury var.," 12
 - obtusum, 87
 - pemakoense, 77
 - "Pink Pearl," 19
 - ponticum, 86
 - racemosum, 19
 - repens, 14, 17, 98
 - "Roberte," 12
 - "Roman Pottery," 12
 - "Romany Chal," 20
 - "Rosy Morn," 19
 - "Russautinii," 12
 - Shilsonii, 86
 - Show, 1954, 28, 56
 - sinogrande, 86
 - "Soulbut," 15
 - (Souliei x Fortunei) x Griersonianum, 15
 - Souliei x "Lady Bessborough," 12
 - — x Loderi, 19
 - spinuliferum x racemosum, 19
 - spinulosum, 19
 - Susan, 21
 - "Unique," 13, 16
 - "Vanessa," 15
 - "Vulcan," 13, 20
 - Williamsianum, 77, 86
 - — x neriiflorum, 17
 - "Yvonne," 15
 - yunnanense, 76
 - Rhododendrons, An Appraisal of, 76
 - Opinions on Some Newer Hybrids, 12
 - Rosa Wichuraiana, 25
 - Rowntree, Lester, 48
 - Rununculus Wilsoni, 98
 - Sanguinaria, 36
 - Santolina Chamaecyparissus, 126
 - Sapindus sp., 39
 - Sarcococca Hookeriana humilis, 25
 - ruscifolia, 25
 - Saxifraga oppositifolia, 25
 - Stracheyi, 25
 - umbrosa, 30
 - Scanlon, Edward H., 116
 - Sciadopitys, 87
 - Scoliopus Bigelovii, 31
 - Senecio Greyii, 46
 - laxifolius, 46
 - Shortia galacifolia, 25
 - uniflora grandiflora, 25
 - Silene Hookeri, 49
 - Sinojackia Rehderiana, 79, 111
 - xylocarpa, 79, 80, 111
 - Soldanella alpina, 25
 - minima, 25
 - Stewartia, 44
 - Strander, John B., 46
 - Stranvaesia Argyi, 100
 - Styrax japonica, 79
 - Svihla, Ruth D., 37
 - Swift, Mrs. Hilda, 67
 - Syringa Sweginzowii, 30
 - Taxus adpressa, 25
 - baccata, 25, 83
 - cuspidata minima aurescens, 25
 - repandens, 25
 - Taylor, Bryan, 22
 - Thea Bohea, 85
 - viridis, 95
 - Theka grandis, 38
 - Thorgrimson, Mrs. O. B., 84
 - Thymus pectinatus, 24
 - Serpyllum, 24
 - villosus, 24
 - vulgaris, 24
 - Tree with a Future, A Christmas, 82
 - Tricuspidaria lanceolata, 86
 - Trillium, 36
 - Trimble, Mrs. Kerry, 86
 - Tropaeolum peregrinum, 91
 - Tsuga canadensis pendula, 83
 - heterophylla, 11
 - Tulipa Clusiana, 90
 - tarda, 90
 - Vaccinium, 44
 - Vitis-idaea minus, 25
 - Vanda coerulea, 38
 - Variegated or Colored Foliage, Plants with, 46
 - Veronicas, New Zealand, 51
 - Viburnum fragrans, 29, 104, 126
 - Tinus
 - Vinca minor, 25
 - — floreplena, 25
 - Viola odorata, 25
 - sempervirens, 25
 - Watt, Margaret E., 51
 - Webb, Gene, 9, 47, 81, 104
 - Weigela praecox variegata, 46
 - rosea, 85
 - Western Larch, 103
 - Whipplea, 48
 - Winter Color, 101
 - combinations, 101
 - green flowering, 132
 - low-growing, 132
 - pink flowering, 132
 - white flowering, 132
 - yellow flowering, 132
 - Wister, John C., 4
 - Witt, J., 66, 80, 96, 121
 - Wyman, Donald, 113, 129
 - York, Gladys, 26



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